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Gas Men Addressed by Laymen

McCarter Medals Awarded At Second General Session

H. C. Abell, president of the American Gas Association, opened the second general session of that body yesterday morning at ten by introducing Philip Cabot, of the Harvard Graduate School of Business Administration.

"The most difficult problem today, is how to deal with a condition of constant and rapid change," said Mr. Cabot in his talk on "Selling All the Gas That Should be Sold in the Home."

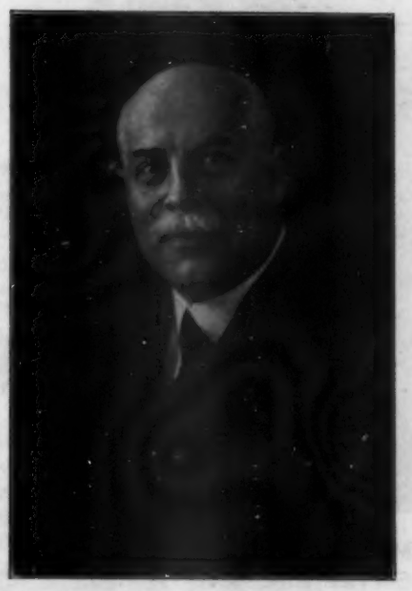
"For that reason, the most dangerous, the most reckless type of executive is the man who refuses to change when the time for change has come.

"The obvious way of increasing the sale of gas in the home is to reduce the price of it."

A Plan of Reducing Costs

In the development of his theme, Mr. Cabot presented a plan which he believes will reduce the cost of gas to the small consumer, and thus induce him to use more. This will at the same time relieve the large consumer of the burden he now bears, and allow him to use more. Mr. Cabot stated that the losses sustained in serving two-thirds of the customers must be borne by the other third; in other words, the large consumers must pay too much because the smaller consumers pay too little. Yet he would reduce the price of gas to both. To make up for the revenue lost by decreasing the price of gas, he would have gas companies charge for a commodity which is free today, and that is, gas service.

"You are selling your customer two wholly distinct articles



GEO. K. BURGESS,
Director Bureau of Standards, Washington, D. C.

and they pay for only one," complains Mr. Cabot. "But the customer can hardly be blamed. Owing to failure to see the importance of this point, or to fear of political consequences, you have not sent him a bill, and so he has not paid it. It is more than possible, however, that he would pay it willingly if you explained it to him, and the time has come when you must try.

Time for Change

"Now is the time to make this change. Further delay is dangerous. We are in a cycle of high prices and unexampled general prosperity which can not last forever, and which will be followed by a cycle of falling prices and unemployment. When that time comes, your customers (two-thirds of whom pay less than cost) will expect gas prices to fall with other prices. This demand will be hard to resist.

Mr. Cabot was secured by the commercial section. The following speaker, James A. Allan, was secured by the Industrial Section and was introduced by Chairman F. F. Cauley, of that section.

Gas and the American Manufacturer

This paper showed evidences of painstaking preparation, in the statistics with which the speaker backed his statements. The subject was "The Gas Industry and the American Manufacturer."

The four common industrial fuels, he said, are coal, coke, oil, and gas. Coal and coke are gradually disappearing in the raw form at least, due to difficulties of handling and regulation. Oil

is the best known and most acceptable in factories where heat is needed, except that it is smoky and unhealthy. Gas is a good fuel, but the cost is relatively high. Where gas and electricity are used, the efficiency of the workmen is higher and their health is better. Liquid fuels will never equal gas or electricity in uniform operation or facility of heat control.

But in any substitution of one fuel for another, the substitute must give cheaper operating costs, for in the final analysis cost will determine the kind of fuel.

Gas rate schedules must be adjusted to meet the economic facts of manufacturing situations.

The development of reliable gas burning equipment must be undertaken seriously and quickly.

Constant and uniform quality of gas is absolutely necessary.

If possible, a more economical B. T. U. standard for gas should be worked out with regulating authorities.

Thoroughly competent sales engineers must represent the industrial departments of gas companies.

THOMAS N. McCARTER,
President Public Service Electric & Gas Co., Newark, N. J.

Six Important Points

Mr. Allan summarized his exposition in six points. Heat treating is developing at a rapid pace and the demand of a fuel for such purpose will be enormous.

The force of Mr. Allan's re- was to find the way to increase the need for his product.

"The fact that despite its more nimble and spectacular competitor, electricity, gas sales had doubled in the past ten years would indicate that the gas man had a full realization of this elementary proposition and was solving it.

"It was just as elementary," continued Mr. Lawrence, "that skillful publicity through the right medium was the only way to guide the public's measure of the gas industry. An officer of the association had said to him that the gas man seemed to lack news consciousness, in complaining that the electric man more often got a front page news story.

marks is increased by the fact that he is an industrial engineer associated with the International Harvester Company, one of the largest users of industrial gas in the country.

Public's Measure of an Industry

The next speaker was David Lawrence, Publisher, United States Daily, Washington, D. C.

"From his own experience," he said, "the average man applied to any industry that served him much the same measure he did to his tailor, grocer, his car, or his radio. It might be expressed in the terms that quality plus cost equals satisfaction. Beyond the simple problem of satisfying a customer, however, lay the larger field of increasing the customer's need for the production. The client whose demand remained at a level always was a prospect for increased business and the problem of the gas man, like that of every other industry.

"Where an accomplishment by any industry has real news value," said Mr. Lawrence, "it will find publication as news, but beware of striving for free publicity. At best it is sporadic and does not bring results.

"If you want your public to award you fair measure your opportunity lies in constant and helpful personal contact with the consumer, and in the advertising field and both must be skillfully done. In neither is the casual effort productive."

G. K. Burgess Addresses Meeting

George K. Burgess, director of the Bureau of Standards at Washington, was the next speaker on the morning's program. His theme was "Perfecting Service and Safety."

"One cannot but be impressed," he said, "with the daring and courage of those pioneers who blazed the way for the establishment of your industry. The conception of the manufacture, storage and distribution through pipes in city streets and into dwellings of coal gas; persuading and demonstrating to the public that such could be done with safety, were no mean accomplishments.

"The methods of producing, distributing and using gas are constantly being improved; but even with present methods it would seem possible to supply all the fuel needs of a city with gas and its by-products at a saving over the total cost of present fuels if we could provide the complete manufacturing and distributing plant at one time and consequently operate it as a chemical industry, scientifically controlled for the highest efficiency, and utilizing each possible product to the best advantage.

Great Difficulties Must Be Overcome

"There are great difficulties in the way of reaching this goal. The present market for gas apparently cannot be developed at present prices for potential heat. Rates apparently cannot be lowered materially until a greater market is developed. Great plants cannot be built unless the demand for their product will justify their cost. But such plants cannot be economically constructed a little at a time while the demand is growing.

"Many of the men in the industry have worried about the future. They find themselves fighting close competition from electricity on the one hand and from coal and oil on the other hand. For several years they have advertised extensively. The program outlined by the Association for the next five years stresses still more advertising. Without criticizing the advertising program I would like to see emphasized the principle, that generally satisfied customers are essential to the expansion of the industry."

Establishing Standards

Mr. Burgess lauded the Association on its work to establish standards which must be adhered to, but suggested that the seal of approval would mean more if the public were advised of it. He concluded, "Your appliance laboratory is a going concern, meeting in a splendid way the demands put upon it. Is the industry ready to go further and establish a research group with a laboratory, using also as seems desirable, one of your plants for study under service conditions? Your proceedings contain the accounts of many excellent investigations carried out on private initiative, but it might be well to consider also the advisability of a national program of research on matters fundamental to the whole industry, carried out under the auspices of this Association, using as may be required your combined facilities. I believe such a program, carefully planned, vigorously prosecuted, and intelligently executed would do more than anything else to benefit the gas industry and our ever increasing gas public."

McCarter Medals Awarded

One medal for conspicuous bravery and seventeen medals for life-saving, the highest tribute the manufactured gas industry can bestow, were awarded yesterday at the annual convention of the American Gas Association.

For exceptional bravery during the Santa Barbara earthquake the American Gas Association Meritorious Service Medal was awarded to Harry F. Ketz, Southern Counties Gas Company, Santa Barbara, California. His act was considered the most worthy of recognition performed in the gas industry during 1925. At the risk of great personal danger he turned off the gas supply during the earthquake, saving and protecting life and property.

HENRY F. KETZ,
Of The Southern Counties Gas Co., winner of the American Gas Association Meritorious Service Medal for 1925. The front and back of the medal and the button is shown.

This medal, donated by Walter R. Addicks, senior vice-president of the Consolidated Gas Company of New York, is the most prized award in the gas industry.

The McCarter Medal, awarded for the saving of a life by the

prone pressure method of resuscitation, was personally presented by T. N. McCarter, President of the Public Service Corporation of New Jersey, to the following men:

The Men Honored

John J. Cavanaugh, The United Gas Improvement Co., Phila.
William Klein, The United Gas Improvement Co., Phila.
George Miller, Public Service Electric & Gas Co., Newark.
Harry G. Robinson, Public Service Electric & Gas Co., Newark.
John J. Hoff, Public Service Electric & Gas Co., Princeton.
Peter J. McDermott, Brooklyn Union Gas Co., Brooklyn.
John Keegan, Brooklyn Union Gas Co., Brooklyn.
Joseph Gallo, Brooklyn Union Gas Co., Brooklyn.
Sylvester Callahan, Brooklyn Union Gas Co., Brooklyn.
Henry J. Colberg, Brooklyn Union Gas Co., Brooklyn.
Charles H. Foux, Central Hudson Gas & Electric Co., Poughkeepsie.
George Middleton, Blackstone Valley Gas & Electric Co., Woonsocket, R. I.
William L. Robertson, Central Maine Power Co., Augusta.
John Ferry, Peoples Gas Light & Coke Co., Chicago.
Frank Barker, Peoples Gas Light & Coke Co., Chicago.
Joseph Dever, Peoples Gas Light & Coke Co., Chicago.

For saving two lives by the prone pressure method, Frederick F. Schneider, Long Island Lighting Co., Bay Shore, L. I., was given the McCarter Medal and Bar. This is the second time an employe of a gas company has been awarded the medal and bar.

Howard S. Carpenter, Public Service Electric & Gas Co., Newark, was awarded the McCarter certificate for assisting Harry G. Robinson.

The session was adjourned at twelve-thirty.

Gas Women Advocate Women Section

Listen To Interesting Talk By Ethel Peyser

Ethel Peyser, Household Equipment Editor of House and Garden Magazine, spoke yesterday on the subject: How Women Can Advance in the Gas Industry. It was, as one pioneer auditor said "a peppy paper"; telling the truth in a very interesting, emphatic way, showing her experience as an advertising writer as well as an editor and writer of books.

Among the things she said trenchantly, was that women have a great deal to give to the Industry, not only in Home Service Department but in every department; that they would forge ahead and give of their ability if they learned every part of the business. Women must take stock and learn to exercise intellectual curiosity. As soon as they did men would recognize them and they would rise.

Gas Not Only Cookery

The gas business is not all cookery. As soon as men realize women can be used in other departments there would be an increase in sales of 70 per cent.

She addressed every one in the industry and showed women how they could learn more about gas in order to advance.

"Understudy all the departments so that you can step into a vacant place, as men do, who watch and wait for vacancies," said Miss Peyser.

She further urged that they use magazines, libraries, and all the agencies teaching gas consumption and distribution, etc.

She concluded: "Don't be satisfied to be a poka dot in a panel of a dress. Aim to be the panel at LEAST!"

The meeting then resolved itself into a Committee and urged organization of a Women's Section of the American Gas Association whose effort is to be the training of women in gas lore inside the industry as throughly as it has been done for women in the home through Home Service.

Meet Our Short Story Genius From Bummin'ham.

Gas men were ever wont to hide their light under a bushel; so here's where we kick over the bushel measure and let Fra Arthur shine like a well lit deacon from the Bible Belt.

None other than Mr. Arthur K. Akers, late of Columbia University, and now Publicity Manager for the McWane Cast Iron Pipe Company, Birmingham, Ala., is the modest and self-effacing young author who, I dare venture, has regaled many of us with his negro stories, in College Humor, Liberty and the Red Book. In sooth Fra Arthur has been called the Octavus Roy Cohen of the Red Book.

His latest effort, a darkey story called the Investor, appears in the October issue of the Red Book.

More power to you, friend Akers! Keep up the good work, only don't get so goldarned good that you might consider giving up your work in the interest of gas and its furtherance.

Industrial Men Have Busy Session

Discuss Sales Organization and Industrial Uses of Gas

The second meeting of the Industrial Gas Section was begun by the reading of the Policy Report by C. C. Krausse, of the Consolidated Gas Electric Light & Power Co., Baltimore, Md.

In commenting on the report Mr. Loebell stressed the need of some uniform policy. Moreover aside from telling the customer that gas is a clean fuel, etc., the industrial gas man must tell him what the gas company will do for him by way of studying and solving his particular problem.

In the reading of the report of the Progress Committee by Mr. H. A. Clark, chairman, Detroit City Gas Co., Detroit, Mich., it was shown what is being done

C. E. PAIGE,
Vice-President, Brooklyn Union Gas Co., Brooklyn, N. Y.

by way of culling useful data from actual industrial heating jobs. These have been of a varied nature; steel, ceramics, baking, etc.

C. E. Paige Delivers Talk

One of the best papers it has been our privilege to hear in some time was read by C. E. Paige, vice president Brooklyn Union Gas Co.

Its title was "Industrial Gas Sales—Their Bearing on General Gas Company Operation."

Some of the high spots in this admirable effort were as follows: Constant effort and discipline are needed.

If gas companies past services have been worthy of it they are entitled to advertise the same.

Industrial business needs more experts—not men merely to hold down jobs. Such effort to arrive at this happy stage will be amply compensated for by the particular company.

In the last ten years industrial gas sales have increased by 1,000 per cent.

Universities and colleges are cooperating in helping gas companies solve industrial problems.

Each company seems to be working out its own industrial fuel problems. Hence the effort is more individual than cooperative.

The men attending the sessions should carry back home and endeavor to put into effect the data and information they have learned from the papers and discussions.

Gas company management must realize that advertising must be done on account of the growing competition from other fuels.

Mr. Allen's Paper Discussed

Mr. Allen's paper which was read before the general session in the morning came in for some discussion. This hinged in part around the point that gas companies must come to the point where they will have to help develop one or two large national manufacturers of industrial appliances.

Mr. Geo. Blakney, superintendent Northwestern Malleable Iron Company, Milwaukee, read a timely paper, "Malleabilizing Kiln at Northwestern Malleable Iron Company, Milwaukee, Wis."

This kiln has been in operation since April 1st of this year.

The time element is an important feature in the production of malleable castings.

The selection of gas as a fuel was only made after investigating oil, coal, producer gas and electricity.

Twenty-five tons of castings per day of 24 hours are obtained.

The length of tunnel is 180 feet. There is a sand seal. The wheels and bearings of the cars are exposed to the atmosphere and need no water or other cooling. Castings are placed in pots 20 inches high, and there are 24 pots on a car.

C. C. KRAUSSE,
Consolidated Gas, Elec. Light & Power Co., Baltimore, Md.

The gas of 530 B. T. U. is boosted to 10 lbs. pressure and 100 per cent perfectly annealed castings are gotten at a cost of $3.70 per ton.

A report was also read by H. O. Andrew, chairman, Publicity Committee.

At the conclusion of the meeting Mr. H. C. Abell made a few timely remarks as did Mr. Brown of Milwaukee.

Canada Looking for Better Gas Conditions

"We have every reason to be encouraged as to the future of the Canadian gas industry," says G. W. Allen, secretary-treasurer of the Canadian Gas Association, and editor of the Gas Journal of Canada, in a recent interview. "Everything points to a prosperous conditions ahead, and especially so in centers where modern merchandising of gas appliances for home and industry are being applied."

"Statistics presented at the recent convention of the Canadian Association, depicting greatly increased gas outputs during the past few years, is in itself something to give us encouragement, and the advances made in the sale of gas equipment in localities favored by cheap hydro power rates, is also an indicator of which way the wind is blowing.

No Room for Pessimists

"No!" said Mr. Allen, "we have no room for pessimists in the gas industry of our country. We, who have taken any interest at all in the sale of gas, and who

G. W. ALLEN,
Secretary-Treasurer, Canadian Gas Association

know what gas can do under certain conditions, are never fearful of competition from other sources and I think when we can compete with ½, 1 and 2 cent electrical energy, there ought to be no such thing as failure talked about."

"All Canadian gas companies operating new business departments on modern lines, are reporting steady increases in gas sales."

J. J. HUMPHREYS,
Montreal Light, Heat & Power Co., Montreal, Canada

Blue Star "Guiding Star" of Home Service

"What Is Home Service? What is all this talk going about of Home Service and its work?" you ask, said Luella M. Fisher, of the Home Service Department of the Erie Stove & Manufacturing Co., Erie, Pa., to our reporter. "Seven years ago, it will be remembered that Home Service was just a wee infant and at this meeting we can see very clearly the progress that has been made since that time. This is manifested in the Home Service Booth on the Million Dollar Pier, the meetings, luncheons, dinners, and the like that feature this convention. The Blue Star will be the guiding star of Home Service activities from now on and with the past progress of Home Service work with Public Utilities and manufacturers, the goal must now be that all homes in the great cities of our industry have rock bottom foundations, i.e. Blue Star equipment. One of the strong factors in this movement is the Home Service department of the gas companies who send their workers out to reach the homes not only by personal contact but through the radio, schools, colleges, women's organizations, and also our own offices where cooking classes, budgeting and all the varied details of home making are made clear.

"It all means good will, sales promotion and a bigger and better Servant of the greatest of all industries, the Home."

Commerical Men Meet Again

Cover Home Service, House Heating and Water Heating

After a few preliminary remarks by R. J. Canniff, *Standard Gas Equipment Co. of Chicago*, in praise of the work of the Home Service sections, C. C. Curtis, *Fall River Gas Works Co. of Fall River, Mass.*, spoke in greater detail on the same subject. He reviewed the advent of gas heating, cooking, refrigeration and garbage incineration. He however urged that in seeking new outlets not to fail to keep the hard-won cooking field. The main idea of Home Service director is to educate women to cook best with gas. It is up to the gas company to decide if a Home Service Section will pay. Miss Starr, Miss Gregory and Mrs. Milliken, the pioneers with the Fall River Company, received glowing tributes. The use of domestic Science Schools, the radio, the model kitchen, etc., was described in building up Home Service locally. "Have you a cooky recipe in which I can use cod liver oil for the children?" is a sample of the odd questions asked of Home Service workers. The question of charging for advanced courses was taken under consideration. A discussion followed.

House Heating

H. Leigh Whitelaw, American Gas Products Corp. of New York followed with a speech on "Selling House Heating." Emphasis was laid on the advantage of gas-heating as a smoke eliminator. The winter peak load has been the bug-a-boo of gas companies in taking on house heating by gas. Better to have the co-operation of heating contractors and the local gas company than their active and organized opposition. Oil-burner men have sold the public on the idea of cleanly, automatic house-heating—why, do not the gas companies take advantage of that accomplishment to their own great benefit.

Insulation

The next speaker was Glenn C. Carnahan, Peoples Gas Light and Coke Co. of Chicago on "Selling Gas by stopping Heat Losses." He recommended the greater use of insulating materials in the construction of homes. He regretted the ruinous construction of many

lesser-priced homes, as far as heating is concerned, by speculative builders. Roof and window protection is all that can be done to remedy conditions on houses already built. This may reduce heating cost as high as 52 per cent in

CLAUDE C. CURTIS,
Vice-President Fall River Gas Works, Fall River, Mass.

favorable cases. Slides, illstrating application of insulating materials were thrown on the screen. A discussion followed the talk.

Gas in the Laundry

A motion was carried that the Commercial Section recommend that Blue Star emblem be continued with blue for its color.

"Selling the Laundry Load" was the problem handled by S. T. Heed of Chicago.

Gas cannot be sold without gas consuming appliances, and these can be sold only in competition. Sell ing appliances is a highly specialized job. The laundry load is a very important factor in increasing domestic use of gas. The laundryman is a competitor of no mean calibre. Propaganda must be met. Laundry equipment allows sufficient margin of profit to afford active sales expense, even to carry other less profitable lines. First sell more machines, but more important keep those already sold working satisfactorily. A high type salesman is an absolute necessity in soliciting business. Mass action is called for to insure success in volume. Increment cost for laundry machines is so low that it reduces sales resistance in homes. Laundry machines cannot be wished, legislated or talked into the home—they must be sold.

Water Heating

The session closed with a speech on "Water Heating Sales" by F. A. Lemke, Humphrey Co. of Kalamazoo, Mich. He elaborated on water heaters as an aid in increasing consumption of gas; on their large market and on their value to the public. Claim was made that it was more profitable than house-heating. An attempt should be made to supplant tank heaters with the newer automatic type. The conclusions were drawn that the need exists for gas water heaters, that they are better and the field is a fertile one.

Technical Men Meet in Second Session

Carbonization and the Waterless Gas Holder Discussed in Detail

The second meeting of the Technical Section was held in the Meeting Room A on the Million Dollar Pier, yesterday afternoon. The meeting was taken up entirely with a discussion of the report of the Carbonization Committee, and also listened to a paper on the waterless gas holder.

The report of the Committee was summarized by R. S. McBride, of Washington, D. C. The Chairman of the Committee this year was A. M. Beebe, of the Rochester Gas & Electric Corp., Rochester, N. Y. The report was of considerable length and hence was not read at the meeting in accordance with the new practice of distributing the printed copies of the reports of Committees before the meeting and presenting a summary of these reports in the meeting itself.

The Carbonization Committee report this year contained the usual number of sections. The Operators' Section dealt with a series of coke tests on various plants, such as horizontal through retort, coke oven, intermittent verticales, intermittent vertical (large size) and continuous vertical. A study was also made of the character of the coke obtained from these plants.

Dry Quenching of Coke

The Dry Quenching Section contained descriptions of various quenching systems.

The Low Temperature and Complete Gasification of Coal Section comprised reports on the status of low temperature carbonization and complete gasification in America and Europe, a discussion of the technical and economic aspects of low temperature carbonization for the production of smokeless fuel, the low temperature carbonization of pulverized fuel and the composition and economical value of low temperature tar.

CLARE N. STANNARD,
Vice-President Public Service Co., Denver, Colo.

The Builders' Section described the progress being made in the design and construction of coal carbonizing machinery and contained contributions from the Gas Machinery Co., Isbell-Porter Co., Parker-Russell Co., The U. G. I. Contracting Co., Russell Engineering Co., Foundation Oven Co., Koppers Co. and West Gas Improvement Co.

The Carbonization Committee report also contained two appendices. One of these was concerned with heat balances at Lowell, Utica and Rochester, and the other was concerned with a study of the comparative utility of coke carbonized in five different types of carbonizing plant as water gas fuel.

R. H. BURDICK,
Pres. Burdick & Co., New York

Operating the Waterless Gas Holder

The only other item on the program was the paper delivered by J. G. O'Keefe, General Superintendent of Manufacture, Public Service Electric & Gas Co., Newark, N. J. This paper dealt with experiences gained in the operation of the waterless gas holder.

ETHEL R. PEYSER ENTHUSES ON GAS

I am privileged to give a short paper addressed to the women of the Gas Industry at this Eighth Annual Convention. I am doubly privileged because the House and Garden Magazine the organization that I represent has taken a keen interest in the problems of Home Service as applied to the ideas and ideals of this group of the Gas Industry and other industries. For years I have been tremendously interested in watching the progress of gas storming new strongholds and substituting new things for old. This year we have had articles from my pen on gas subjects as follows: Incinerations, Laundry Dryers, Gas as Furnace Fuel, Gas Ranges, and other subjects.

The very honest acrobalism the Gas Industry would make any American proud. But above all, as gas brings ease and comfort to living. Who would not enthuse!

The Home Service Teas

Besides carrying benches, ordering groceries, answering thousands of questions, moving stoves and being generally useful, Miss Dowell has baked 400 cookies. These cakes are to be served at the tea which Home Service is giving in the Ball Room to all the lady visitors Tuesday and Thursday afternoon at four.

Accountants Discuss Audits Statistic and Costs

Second Meeting of Section Has Interesting Program

The second meeting of the Accounting Section was held yesterday afternoon in the Hotel Traymore. The meeting was devoted to the reading and discussion of papers relating to audits, cost accounting, customers' accounting and statistics.

The first report on the program was presented by the Gas Company Audits and Auditing Committee, of which A. S. Corson, of The United Gas Improvement Co. of Philadelphia, is Chairman. This report dealt with the purposes and advantages of an audit, indicating that these were the detection of fraud, prevention of errors, the ascertainment of the actual financial condition of the company, etc. It also described the qualifications of an auditor and then went on to sketch a system of auditing outlining the order of work. This part of the report is written in great detail and includes all the many items that form a part of an audit. The report also contains a number of forms used in making the audit.

Customers Accounting System of Consolidated Gas Co.

The next paper on the program was delivered by G. A. Burrows, of the Consolidated Gas Co., New York City, and described the system of customers' accounting used in that company. This was a very interesting paper and contained a large number of forms showing clearly the exact system employed by this company in this work. The system is a comparatively new one, having been in effect for a year only.

Statistics and Cost Accounting

James E. Kane, Consolidated Gas Electric Light & Power Co., Baltimore, Md., Chairman, Statistics and Cost Accounting Committee, delivered a report on the work of this committee. There is no question but that the subjects of statistics and cost accounting are of vital importance to the gas industry. It was pointed out in the introduction to this report that while research in the laboratory is a very important matter, research in the office is also of great significance. The two go hand in hand and only reach maximum efficiency when carried on simultaneously. It is becoming increasingly necessary to undertake office research, especially in that the gas industry is on the eve of a tremendous expansion.

The first portion of this report was devoted to the work of the

sub-committee on Selling the Idea of Cost Analysis to the Gas Industry, of which R. H. Knowlton, of The United Gas Improvement Co. of Philadelphia, was Chairman. The report gave a series of letters sent out by the committee to member companies.

A Sub-Committee on Results of Practical Application of Last Year's Report, G. E. McKana, The People's Gas Light & Coke Co., Chicago, Ill., Chairman, also made a report.

Property and Operating Costs

The report also contained two detailed analyses of property and gas operating costs into four basic cost elements with a further subdivision between classes of customers served.

The final section of the Statistics and Cost Accounting Committee dealt with the work of the sub-committee on standardization of questionnaires. G. S. Cramer, The Brooklyn Union Gas Co., Brooklyn, N. Y., was chairman of this committee. His report also dealt with undeveloped uses of statistics.

The meeting closed with the report of the Going Value Committee, of which J. I. Blanchfield, The Brooklyn Union Gas Co., was Chairman.

Home Service Directors Meet

Enjoy Luncheon and Interesting Talks

The Home Service directors luncheon at the Shelburne Hotel was a tremendously interesting and vital meeting. Seldom do so many women who are doing big things in a worthy field get together and talk about it as well and tellingly as these capable women did. They came from all parts of the country with the same interest and aims and breathed enthusiasm, love and splendid effort into every word they uttered. They had vision, and hope, hope that held a promise for a greater and richer future for Home Service, for the homes of the country, for happiness, peace, co-operation and good will. It was a pleasure to hear them talk and know that each one of these splendid vital women had given a bit of herself to bring Home Service to its worthy place in the Industry.

Attendance at Meeting

Those present at the meeting were:

Miss A. Deane Dowell, Home Service Counsellor A. G. A., (Presided).

Mrs. Anna J. Peterson, Peoples Gas Light & Coke Co., Chicago, Ill.

Mrs. Cecil G. Harvey, Westchester Lighting Company, Yonkers, N. Y.

Mrs. Eva Hawkins Shanks, Public Service of Northern Ill., Chicago, Ill.

Miss Kathleen Atkinson, Providence Gas Co., Providence, R. I.

Miss Helen Hess, Public Service Electric & Gas Co., Newark, N. J.

Mrs. Frances S. Mathis, New Haven Gas Light Co., New Haven, Conn.

Miss Marjorie Pidgeon, Brooklyn Borough Gas Co., Bklyn., N. Y.

Miss Margaret Huton, Westchester Lighting Co., Yonkers, N. Y.

Miss Ada Bessie Swann, Public Service Gas & Electric Co., Newark, N. J.

Miss Routledge, Davis Baking Powder Co., Staten Island.

Mrs. Wetherali, St. Louis.

Miss May Bennett, East Ohio Gas Co.

Dorothy Knight, Detroit.

Mrs. Lung, Chicago.

Mrs. Loyd.

Miss Wilson, Toronto Gas and Electric Co.

Miss Moye Lovell, Consolidated Gas Co.

Mrs. Dwelle.

Margaret Sawyer.

Miss Hood, Gas Age Record

Ethel Belbry, Birmingham, Alabama.

Miss Marie Sellers, Pictorial Review.

Miss Ethel Peyser, Household Editor House and Garden Magazine.

Miss Annabelle Turner, Central Hudson Gas and Electric.

BERTHA L. BARNES,
Home Service Dept., Citizens Gas & Fuel Co., Terre Haute, Ind.

Miss Cook, Brooklyn Borough Gas Co.

Mrs. Fry, East Ohio.

Miss Edith Yeager, Westchester Lighting Company, Yonkers, N. Y.

Mrs. Luella M. Fisher, Erie Stove Manufacturing Co., Erie Pa.

MRS. ANNA J. PETERSON,
Home Service Dept., Peoples Gas Light & Coke Co., Chicago, Ill.

Six Brooklyn Union Men Receive Medals

Were Honored At General Session Yesterday

Six Brooklynites were honored on the stage of the Million Dollar Pier, Atlantic City, N. J., yesterday, at the general session of the American Gas Association Convention. The men honored were Joseph Gallo, Henry J. Colberg, Sylvester Callahan, Peter J. McDermott, John Keegan and Theodore Geisel, all of whom are employees of the Brooklyn Union Gas Company. The first five named were given McCarter Medals and Theodore Geisel received a citation. Each award was for the saving of a life during the year 1925, by use of the Schaefer Method of Resuscitation.

This is the first time since the McCarter medals were offered, that five men of one company have each been decorated for valor and one received a citation. The best record heretofore achieved was by employees of the Public Service Corporation of New Jersey, who received three medals in 1924.

The Story of the Rescues

On May 23, 1925, at about 12:30 a. m., Joseph Gallo of 336 2nd Street, hearing shouts for help in the hall of this address, rushed out and found Pietro Centurino, unconscious on the floor. Gallo immediately turned him over on his stomach and applied the Schaefer Prone Pressure Method of Resuscitation. After working over Centurino for about fifteen minutes, Gallo succeeded in reviving him.

Henry Colberg and Theodore Geisel, walking along Third Avenue on May 7, 1925, at about 5 p. m., when at the corner of Tenth Street, they noticed a crowd around a manhole. On inquiring as to the trouble they were informed that a man was lying unconscious at the bottom of the manhole. They immediately secured a rope with a hook attached, lowered it down the manhole, hooked it on the man's clothing and in this way pulled him to the surface. The victim was unconscious and had turned black. Colberg immediately started to apply the Prone Pressure Method of Resuscitation, continuing for about fifteen minutes, at the end of which time he was relieved by Geisel. Geisel continued the method for five minutes and then Colberg again worked over the man for another ten minutes, at the end of which time the victim began to show signs of life.

On November 13, 1925, Stephen Callahan, in answer to a leak complaint, went to 128 Wallabout Street. On arrival and after locating a gas leak in an apartment occupied by a Mr. Pettas, Callahan was asked by a girl to wait in the kitchen until he could get to the meter. After about five minutes, the bath-room door suddenly opened and a man fell through to the floor, unconscious. Callahan carried him out into the hallway and went to work on him with the prone pressure method. After applying the method for about twenty minutes, the victim had recovered.

On October 31, 1925, John Keegan and Peter J. McDermott were walking along Columbia Heights, when between Orange and Pineapple Streets, they were informed that a man had been knocked out by gas, about a block away. Keegan and McDermott immediately ran to the next block, where they found a man lying unconscious on the ground. Keegan at once turned the victim on his stomach and started to apply the prone pressure method of resuscitation. Keegan worked over him for about fifteen minutes, after which he was relieved by McDermott, who continued for another fifteen minutes. At the end of this time the victim had been fully revived.

Every employee of the Brooklyn Union Gas Company is instructed in the Schaefer Prone Pressure Method of Resuscitation, for reviving all persons who succumb to any kind of asphyxiation whatsoever.

These medals are offered by Thomas N. McCarter, president of the Public Service Corporation of New Jersey, who presented each of the Brooklyn heroes with their medals and citations on the convention platform. There were about fifty of their associate employees present at the convention and they applauded their fellow-workers on the stage.

President's Reception Colorful

The president's reception and dance Tuesday evening were a great success. The lighting of the ball room was especially beautiful. The ladies in their many hued gowns resembled gaily colored butterflys floating through pink and white vapor mists. And the music! A mighty flag in colored lights floated in a star-lit ceiling and huge eagles with ever bending wings added a bit more beauty to the lovely scene.

Home Service! What It Can and Does Do

Do you believe in signs? This one is worth reading many times over.

Five important reasons for a Home Service Department in a Gas Company.

Increases Sales.

Helps to Build Better Public Relations.

Insures a Steady Healthy Growth of Business.

Helps to Increase the Value of Company Stock.

Helps to Cut Cost of Co-operation.

Five Ways Home Service Work is Helping the Gas Industry.

Saving the Cook-With-Gas Market.

Creating More Markets for Domestic Markets.

Paving the Way for National Gas Propaganda.

Promoting Better Merchandising Practise.

Cooperating with Other Dealers.

Advertising Helps Sales of Gas

Frank L. Blanchard Talks on Gas Company Local Advertising

"The gas company in the United States that is quietly sitting back and waiting for a National Advertising campaign to get under way to tell the people about their organization and its work, aims and purposes is losing money every day." This statement was made yesterday by Frank L. Blanchard, retiring chairman of the Publicity and Advertising Section of the American Gas Association.

"Gas companies are today realizing more and more the helpfulness of advertising not only in selling appliances but in selling service and extending the fields served," he said. "Each year sees a greater number of companies launching local advertising campaigns and the results and the cleverness of the copy used make most interesting study."

"A few years ago gas executives said, 'What's the use of advertising?' Today they are realizing that a little space in their newspapers is serving to reach new customers and is increasing their sales of gas and appliances.

Objection to Continuous Advertising Ill-Founded

"I have had men say to me that they didn't feel continuous advertising was the best for their gas company. 'We haven't anything to tell the public all the time and if we have no message what good is our advertising.' What a pitiful argument. The ad writer who can't find anything to talk about in the gas industry at any and all times is not in the right business.

"A gas company should make it a point to advertise at least once a week, if not regularly every day. As to the amount to be spent on advertising per annum, that's a difficult question. Some companies get by with an appropriation of 1/16 per cent of their income each year. Others spend considerably more, some as high as 3 per cent. A minimum amount, in my estimation, would be ½ to 1 per cent.

"Some company managers think that advertising is advantageous to them only because it keeps them in good standing with their newspapers. This belief also is wrong. The company which is spending money for advertising for this purpose alone and not using their advertisements for their fullest advantage is losing an opportunity.

Advertising and the Peak Load

"I don't think many of our companies are alive to the possibilities offered in advertising to increase their peak load. Some say that they are doing a good business now and don't need any more. This is unfair to their stockholders. New homes are being built every day in every community in the nation. New homes mean a heavier load in peak hours. An added addition to the peak loads lies in the growing use of appliances. These are being perfected in every line. Refrigeration by gas in one of the newest uses. At our convention exhibit here this week we have several types shown. They are going to have a big influence in building up the load of the future. Their market is just opening, but I firmly believe that they are going to jump into the lead with great strides.

"The company executive and officers cannot sit back and leave all the work to the advertising manager," says Mr. Blanchard. "They must prove themselves 'mixers' and devote considerable of their time to civic affairs. This is a phase of advertising as important as that of the adwriter," declared Mr. Blanchard. "Another duty of the company manager," he said, "is to watch that his advertising manager keeps his copy 'up-to-date' and on discussions of interesting subjects.

Several Lines of Copy Used

"Where industrial companies advertising in trade papers is chiefly of a technical nature the local gas company can follow several different lines in their newspaper advertising. A 'Smokeless City' campaign has worked out well in one western city and, although they have not yet achieved their aim the gas company there today has more than 500 homes heated by gas. Oil heating will some day be too expensive. If the gas companies of the United States pushed this line in their advertising they would find gas taking the place of the oil heaters within a few years when experts declare our present oil supply will be near exhaustion.

"Indifferent public relations, high service rates, low sale of appliances and a poorly developed territory generally characterize the non-advertising company," he said in conclusion: "When you find a city enjoying first-class service at reasonable rates, with harmonious public relations and a fully served and contented population, you will invariably discover that the local utility companies believe in and practice advertising on a liberal, intelligent basis. Advertising is as necessary to the progressive public service company as the fuel which is used under its boilers.

JOHN F. WEEDON,
Editor Peoples Gas Club News, Chicago, Ill.

Window Displays on Million Dollar Pier

Four Window Displays, Each of a Different Appeal, Are on Exhibition at the Eighth Annual Convention of the American Gas Association

In one the scene is laid in Colonial days, against the background of a stockade of peeled and sharpened saplings, over which are visible the tops of second growth pine, appear two figures in the hand stocks, a female "witch," with the accusation labelled above and a depressed looking male sporting the progenitor of the modern "bob" changed with the serious offense of "took a bath."

A framed placard of not too conspicuous dimensions advertises the fact that "today a gas water heater assures a hot bath, day or night, for just 3½ cents." This display carried the label of the Consolidated Gas Company of New York.

The Home Cellar and House Heating

The second shows a section of the conventional home cellar with its concrete walls and wooden stairs left rear, and a gas-fired furnace prominent right. On the left a galvanized ash-can full to overflowing and gracefully draped with a pair of pants much the worse for wear in the line of furnace duty catches the eye. Midway stands the house owner regarding the aforesaid ash receptacle with anything but a regretful expression and the letter runs "Farewell to Ashes and Stoking." This by the Brooklyn Union Gas Company.

Space Heating in a Window Display

A sitting room equipped with the usual impediments of library table, overstuffed chairs, radio cabinet, etc. Mr. Home-owner seated with upturned collar and hands in pockets. Mrs. H. in fur wraps intently and wistfully inspecting a suspended thermometer. Over all a frigid air that carries arctic suggestions and the lower front bordered with various typs of heaters. The legend reads "Don't go to bed to get warm." Bears the signature of the Central Hudson Gas & Electric Co.

Poster Effect

The fourth display is in poster effect. An unusual background turreted at the wings supports in center an imposed star couched in a demi-lune with filagree above the ensemble illuminated. Insets in the wings show a laundry and a lavatory sketch. Benches display sundry attachments and conveniences for gas users. Exhibited by Ladede Gas Light Co., bearing signature of Syl. C. Rieser. The Blue Star label is prominent.

Accounting Section Booth Displays Billing Methods

The comprehensive accounting section exhibit contains the machines used by five great gas companies in their billing and other office work.

Two types of accounting are shown, the dual plan in which ledgers are posted and bills are written simultaneously, and the stub accounting plan.

The dual system is used by the Kings County Lighting Company of Brooklyn, and the Consolidated Gas Company of New York, the stub accounting system by the other three exhibiting companies, the Queensborough Gas and Electric Company of Far Rockaway, the Peoples Gas and Coke Company of Chicago, and the Public Service Electric and Gas Company of New York.

Actual billing demonstrations are being given in this booth of the work done, and charts are posted on the walls, showing samples of all the forms and accounting sheets used.

Sidney Curren, of the Public Service Company, is chairman of the Exhibit Committee, which arranged the booth.

Reports of the accounting section this year include information in cost analysis and its application to specific companies; based on actual operating figures, application of statistics both national and local; customer accounting and billing systems; storeroom accounting and inventory taking; cost systems for the operations of motors and mechanical equipment; relations with customers from the standpoint of contacts in the commercial office and consumer accounting divisions; gas company audits and auditing; and uniform classification of accounts.

The Accounting Section booth is crisply businesslike, as an office should be, and many of the ornamental touches which draw attraction to other booths are omitted here.

Favors Distributed at A. G. A. Luncheon

The ladies attending the Eighth Annual Convention were delightfully entertained yesterday afternoon at a luncheon and card party. It was arranged by the Entertainment Committee of the Association at the Submarine Grill of the Traymore Hotel. Luncheon favors were handsome bridge cards and scoring pads in leather cases.

Courage Personified!

A man of remarkable courage asked to have the pleasure of being a guest at the Home Service Luncheon on Tuesday. He was serious, too!

The Old Masculine Appeal

Hidden behind a trellis of climbing roses is the American Gas Association's Home Service Booth. It is a tremendously popular place. Men stand under the arched gateway; men glimpse over the white picket fence. Men, men! Men breathe in the fascinating aroma of baking cookies. Who eats the samples? MEN!

The Pier Process

An Interview With Willis J. Murdock

"Necessity is the mother of invention" is an old and more or less bilious adage, but we feel it is somewhat apropos as a preface to the following writeup.

In adapting bituminous coal to the water gas process the various experimenters and investigators perforce encountered many difficulties of a varied nature. To begin with when the soft coal was charged into the generator it was observed that the larger lumps of the fuel tended to spread out and lodge against the walls of the generator. In turn the very small particles and fines sought a position in the middle, forming so to speak a central core. Witness the physical and termochemical 'snarls' that ensued as a result of this bedeviling tendency of the coal after being charged into the generator.

Snarl No. 1. A very noticeable in the degrees of permeability of the fuel bed to the passage of air and steam through the same.

Snarl No. 2. Creation of an "active area" at the walls and an "inactive area" or core in the center.

Snarl No. 3. A great variation in the thermochemical reactions taking place in the fuel bed both during the blow and run.

Increasing Wall Area

The problem then of Messrs. Murdock, Edgar A. Lungren and Owen B. Evans, the patentees, resolved itself finally into one of developing a generator that would increase the wall area of the same, thereby practically nullifying the "inactive area" and its retinue of ills.

Mr. Murdock and his associates worked out the solution which, briefly stated, consisted in building a more or less cylindrical pier of fire brick in the center and on the grate of the generator and to a height well up towards the top.

The efficiency using the pier process is just as high as is the case with one hundred per cent coke or anthracite.

By use of the pier the wall surface is increased roughly 33 per cent.

In the case of bituminous coal the air blast is run at about 26 inches pressure and about 8000 cubic feet per minute are used in an eleven foot machine. The blast is not preheated.

The pier can be installed on any water gas machine and in no way would the shell have to be altered or dismantled.

The clinkering trouble is less than with the ordinary water gas set.

The pier stands up well against heat and there is one case where the pier needed no attention after one and one half years in use.

The pier process can be used on any type of coal that might be found in a particular locality.

Mr. Murdock, a graduate of Lehigh University, was bustled, in 1921 with his co-patentees. into the problem of using soft coal and, as he put it, they had to make good. It appears that they have delivered with a bang.

The United Gas Improvement Company is exclusive sales agent for the pier process, and drawnings of the pier are being shown at the U. G. I. Contracting Co. booth.

Registration 12 M., October 12th to 12 M., October 13th

A

Ackerman, Richard; Englewood, N. J.; Dennis.
Adams, Joseph; Philadelphia, Pa.
Addicks, W. R.; New York, N. Y.; Brighton.
Albrecht, G. H.; Baltimore, Md.; Strand.
Alden, J. D.; Elizabeth, N. J.
Allan, Jas. R.; Chicago, Ill.; Ambassador.
Allen, Cornelius N., Jr.; Orange, N. J.; Chalfonte.
Allen, E.; Oak Park, Ill.; Ambassador.
Allen, Richard W.; Westerly, R. I.; Ambassador.
Allan, Thos. C.; Phila., Pa.; Traymore.
Allebach, Wilmer K.; Camden, N. J.; Shelburne.
Altrick, Jos. G.; Savannah, Ga.; Traymore.
Alquist, Hilmer G.; Quincy, Mass.; Chalfonte.
Ambrose, George C.; Boston, Mass.; Chalfonte.
Ames, Chas. R.; Red Bank, N. J.; Marlborough.
Ammerman, Ray; Jenkintown, Pa.; Ambassador.
Anderson, Andrew M.; White Plains, N. Y.; Ambassador.
Anderson, John C.; Elizabeth, N. J.; Dennis.
Annett, Edward B.; Maplewood, N. J.; Chalfonte.
Armagnac, A. S.; New York City; Ambassador.
Atkinson, Vernon L.; New York, N. Y.; Wheeler.
Atwood, Byron H.; Wilmington, Del.; Marlborough
Atwood, Chas A.; Brooklyn, N. Y.; Dennis.
Auringer, Howard Wm.; Bloomfield, N. J.; Chalfonte.
Austin, George B.; Newport, R. I.; Traymore.
Austin, R. C.; Chicago, Ill.
Ayling, H. J.; New Haven, Conn.; Strand.

B

Bachmann, G. K.; East Orange, N. J.; Wheeler.
Baer, Chas. H.; Baltimore, Md.; Chalfonte.
Baer, John A.; York, Pa.; Strand.
Bailey, Edward; Harrisburg, Pa.; Marlborough.
Bailey, Frank R.; Calais, Me.; Maison Hotel.
Bailey, W. B.; Cortland, N. Y.; Ambassador.
Baker, Lamar; East Orange, N. J.; Chalfonte.
Baldwin, T. V.; Auburn, N. Y.; Shelburne.
Ballard, Roscoe Frederick; Chester, Pa.; Chalfonte.
Bancroft, H. L.; Springfield, Mass.
Barker, J. W.; Geneva, N. Y.; Chalfonte.
Barnes, Cyrus; Boston, Mass.; St. Charles.
Barnes, Geo. W.; Winfield, N. Y.; Ambassador.
Barnes, H. L.; Hartford, Conn.; Chalfonte.
Bartel, Emil J.; Brooklyn, N. Y.; Strand.
Bartlett, Craig S.; Newark, N. J.; Dennis.
Bates, Wm.; Cleveland, O.; Marlborough.
Baumgartner, Dr.; Aspinwall, Pa.; Chalfonte.
Baylie, Harry C.; Phila., Pa.
Bayly, C. Clay; Washington, D. C.; Traymore.
Beam, H.; Toledo, O.; Traymore.
Bear, O. B.; Cumberland, Md.; Ritz.
Beard, William Kelly; Phila., Pa.
Beegle, Collin; York, Pa.; Ambassador.
Bees, Jos.; Scranton, Pa.; Chalfonte.
Belaito, Frank; Glassboro, N. J.; Shelburne.
Beling, Geo. A.; Phila., Pa.
Bellamy, Charles Robert; New York; Shelburne.
Benedict, David B.; New Brunswick, N. J.; Dennis.
Bennett, James M.; Phila., Pa.
Benson, Blair V.; Jersey City, N. J.; Dennis.
Benson, F. S.; Brooklyn, N. Y.; Gerstel's Leland.
Berger, Milton; Atlantic City.
Berry, E. G.; Toms River, N. J.
Blatz, John J.; Phila., Pa.
Blauvelt, William H.; New York; Shelburne.
Blome, Geo.; Baltimore, Md.; Traymore.
Bogle, Frank P.; Phila., Pa.
Bohmler, Aureim; Newtown, Pa.
Borden, E. G.; New York City; Ritz.
Bouton, H. R.; Plainfield, N. J.; Breakers.
Bovee, L. E.; Pittsburgh, Pa.; Ritz.
Bovee, L. S.; Pittsburgh, Pa.; Ritz.
Boyer, Edward G.; Norristown, Pa.; Marlborough.
Boylan, M. W.; Belmar, N. J.; Marlborough.
Boyles, Thomas D.; Schnectady, N. Y.; Knickerbocker.
Bosell, Harold; New York City; Traymore.
Bradley, Jos. H.; Phila., Pa.
Bradley, W. H.; Springfield, Mass.; Traymore.
Bradway, B.; Pittsburgh, Pa.; Haddon Hall.
Brandt, A.; Newark, N. J.; Chalfonte.
Brandt, D. G.; New York City; Ritz.
Bratz, August John; Union, N. J.; Chalfonte.
Brearly, W. R.; Princeton, N. J.
Brendden, Emilie M.; New York City; Shelburne.
Brett, A. Geo.; Boston, Mass.; Marlborough.
Brewell, F. S.; Phila., Pa.; Ritz.
Brewton, Wm. G.; New York City.
Broadston, O. P.; Des Moines, Ia.; New Belmont.
Brock, William C.; Nantucket, Mass.; Runnymeade
Brooks, R. D.; New York City; Shelburne.
Brown, Albert J.; Concord, N. H.; Strand.
Brown, Albert Turney; Newark, N. J.; Dennis.
Brown, E.; Phila., Pa.
Brown, John H.; Boston, Mass.; Strand.
Brown, J. Willard; Rochester, N. Y.; Marlborough
Brown, Ralph A.; New York City; Ambassador
Brown, Samuel W.; Florence, S. C.; 29 S. New York Avenue.
Brown, T. W.; Massillon, O.; Brighton.
Bruehle, Lawrence; Brooklyn, N. Y.; Hotel Astor.
Brumbaugh, Clarence E.; Cleveland, O.
Brumbaugh, I. V.; St. Louis, Mo.; Shelburne.
Brunner, Roy S.; Lock Haven, Pa.; Ritz.
Buckle, L. G.; New York City.
Budd, F. W.; Muncie, Ind.; Altemus Hotel.
Budst, H. L.; Camden, N. J.; Traymore.
Burdick, I. H.; New York City.
Burdick, R. H.; New York, N. Y.
Burdick, R. L.; New York City; Arlington.
Burford, J. H.; Newark, N. J.; Dennis.
Burke, J. W.; Coney Island, N. Y.; St. Charles.
Burke, Stephen P.; Long Island City, N. Y.; Ritz.
Burns, Mr.; Brooklyn, N. Y.; Marlborough.
Burr, Robert B.; Columbus, O.; Ambassador.
Burt, J. R.; Bayonne, N. J.
Butler, Joseph; Syracuse, N. Y.; Marlborough.
Byrne, Thomas B.; Newark, N. J.; Fredonia.

C

Caldwell, John R.; Atlantic City.
Callahan, Chas. H.; Phila., Pa.; Fredonia.
Camp, H. W.; New York City; Ritz.
Campbell, Frank; Nashua, N. H.; Strand.
Cannon, Harold C.; Brooklyn, N. Y.; Dennis.
Card, Lawrence B.; New York City; Ritz.
Carlson, Chas. F.; Plainfield, N. J.; Chalfonte.
Carlson, Howard R.; Hartford, Conn.; Chalfonte.
Carolan, P. C.; Somerville, N. J.; Dennis.
Carney, Thos.; Phila., Pa.; Holmhurst.
Carter, Francis P.; Mt. Vernon, N. Y.; Knickerbocker.
Britt, H. O.; Columbia, S. C.; Marlborough.

Castle, William E.; Orange, N. J.; Dennis.
Catlin, Byron J.; New Haven, Conn.; Pennhurst.
Causbrook, William R.; Plainfield, N. J.; Dennis.
Chadwell, William H.; Newark, N. J.; Ambassador
Challenger, B. R.; Wilmington, Del.; Marlborough
Chapman, D. W., Jr.; Chicago, Ill.; Ambassador.
Chapple, Bennett; Middletown, O.; Marlborough.
Chase, E. H.; Chatham, N. J.; Shelburne.
Chevalier, Chas. C.; New York City; Knickerbocker.
Christian, Frank; New York City; Shelburne.
Clark, C. E.; Mahanoy City, Pa.; Morton.
Clark, Charles J., Jr.; Chester, Pa.; Marlborough.
Clark, C. S., Jr.; New York City; Ambassador.
Clark, T. F.; Phila., Pa.
Clarke, P. H.; Newark, N. J.; Chalfonte.
Clarke, Wm. C.; Westerly, R. I.; Ambassador.
Cliff, H. E.; Orange, N. J.; Haddon Hall.
Clothier, Wm. J.; Phila., Pa.
Coate, P. S.; Chatham, Ont.; Marlborough.
Cody, E. J.; Providence, R. I.; Shelburne.
Coffman, E. Foster; Camden, N. J.; Shelburne.
Cohen, Harry B.; Chicago, Ill.; Shelburne.
Cole, A. B.; Boston, Mass.; Chalfonte.
Coleman, Philip L.; E. Orange, N. J.; Chalfonte.
Collier, Charles Allen; Atlanta, Ga.; Chalfonte.
Colins, R. B.; Verona, N. J.; Chalfonte.
Combs, M. A.; New York City; Shelburne.
Conklin, Wm. E.; Newburgh, N. Y.; Chalfonte.
Conklin, W. W.; New Haven, Conn.; Shelburne.
Connolly, John P.; Charleston, S. C.; Strand
Conroy, J. R.; E. Orange, N. J.; Strand.
Cook, E. M.; Phila., Pa.; Chalfonte.
Cooley, B. E.; Auburn, N. Y.; Maison Hotel.
Cooney, James J.; Adrian, Mich.
Cooper, H. C.; Pittsburgh, Pa.; Brighton.
Corby, T. A.; Kingston, N. Y.; Ambassador.
Cordner, Alex; Trenton, N. J.
Corr, George F.; New York; Ritz.
Corrin, John B.; Pittsburgh, Pa.; Brighton.
Corson, A. S.; Phila., Pa.; Traymore.
Corss, John J.; Burlington, Vt.
Cougevan, Thomas M.; Canadaigua, N. Y.; Marlborough.
Cox, F. J.; Phila., Pa.
Cox, John; N. Y.; Strand.
Craig, Allan C.; Newark, N. J.; Chalfonte.
Cramer, C. F.; Toledo, O.; Traymore.
Crawford, C. W.; Pittsburgh, Pa.
Cremer, George S.; Brooklyn, N. Y.; Dennis.
Crippen, C. I.; New York City; Ambassador.
Crowell, Robert F.; Bridgeton, N. J.; Ritz.
Crumley, T. R.; New York City; Marlborough.
Culver, O. T.; Englewood, N. J.; Chalfonte.
Cutignol, Mark; Rahway, N. J.; Chalfonte.

D

Dady, Geo.; Rochester, N. Y.; Marlborough.
Dahlstrom, Bertil Philip; Jersey City, N. J.; Dennis
Daily, Francis L.; Chicago, Ill.; Ambassador.
Dallas, A. C.; Hackensack, N. J.; Dennis.
Damon, Roger Henderson; Paterson, N. J.
Darling, Maurice F.; Boston, Mass.; Chalfonte.
Darlington, Frank H.; Glassboro, N. J.; Marlborough.
Dasey, Donald J.; Peekskill, N. Y.; Dennis.
Davey, Arthur F.; Sheboygan, Wis.; Ambassador.
Davey, George W.; Long Island City, N. Y.; Ambassador.
Davidson, Kenneth Hugh; New York, N. Y.; Ambassador.
Davis, Wm. H.; Bartlesville, Okla.; Ambassador.
Davidson, Clair F.; Phila., Pa.; Ritz
Deakyne, Dean J.; Chester, Pa.; Ritz
Deal, E. C.; Belmar, N. J.; Marl.-Blenheim
De Mey, Chas. F.; Poughkeepsie, N. Y.; Traymore
Demorest, Prof. Dana J.; Columbus, O.; Marl.-Blen.
Dequine, L. E.; Long Branch, N. J.; Marl.-Blen.
Deer, J. B.; Phila., Pa.; Traymore
Detzel, Fred F.; Erie, Pa.; Traymore
Devereaux, J. W.; Chicago, Ill.; Traymore
Devlin, Edward J.; Brooklyn, N. Y.; Traymore
Devlin, John C.; Brooklyn, N. Y.; Traymore
Diblin, George A.; Phila., Pa.; Frankford
Dickerson, L. S.; Glassboro, N. J.; Marl.-Blen.
Dickson, A. M.; New York City; Ambassador
Dickson, David H.; Phila., Pa.; Shelburne
Dill, John H.; Baltimore, Md.; Chalfonte
Diliman, E. S.; Phila., Pa.
Dillon, M. E.; Coney Island, N. Y.; Chalfonte
Dobbin, Edwin R.; Geneva, N. Y.
Doherty, Mr.; Chicago, Ill.; Ambassador
Doig, E. M.; Staten Island, N. Y.; Ritz-Carlton
Dold, G. T.; Burlington, N. J.; Dennis
Dole, Walter S.; Springfield, Mo.; Ambassador
Doro, Fred N.; Portland, Maine; Chalfonte
Downs, C. R.; N. Y. C.; Marlborough-Blenheim
Doyle, Perrie J.; Orange, N. J.; Chalfonte
Drake, Francis E.; Lynn, Mass.; Chalfonte
Drake, John H.; Morristown, N. J.; Marl.-Blen.
Draper, H. H.; Phila., Pa.; Breakers
Driscoll, Joseph; Hoboken, N. J.
Duaei, A. T.; Chicago, Ill.; Shelburne
Duncan, A. J.; Pawtucket, R. I.; Marlborough
Duncan, Daniel; New Haven, Conn.; Pennhurst
Dunham, R. E.; Berea, Ohio; Dennis
Dunkak, E. B.; Passaic, N. J.; Dennis

E

East, Geo. H.; Rochester, N. Y.; Marlborough
Eastman, R. D.; Cleveland, Ohio.
Eaton, H. M.; Detroit, Mich.; Traymore
Eavenson, E. R.; Phila., Pa.; Shelburne
Eckert, Allen B.; Phila., Pa.
Edgar, Harry T.; Pawtucket, R. I.; Marlborough
Eells, H. W.; N. Y.
Egan, E. J.; Pittsburgh, Pa.; Ambassador
Ehrmann, H. A.; Chicago, Ill.; Ambassador
Ellett, H. J.; Phila., Pa.
English, John A.; Jenkintown, Pa.
Eor, W. F., Jr.; Augusta, Ga.; Marlborough
Erlach, Paul Alvin; Hammond, Ind.; Ambassador
Etter, Herbert Henry; Newark, N. J.; Dennis
Evans, James M.; N. Y. C.; Shelburne
Evarts, Daniel E., Jr.; Jersey City, N. J.; Chalfonte

F

Fairfield, Clifford L.; Boston, Mass.; Ambassador
Fairchild, F. Regnault; Ambler, Pa.; Traymore
Farrand, W. L.; Phila., Knickerbocker
Farrell, J. L.; Passaic, N. J.; Dennis
Federer, Theo. P.; Schenectady, N. Y. Shelburne
Feinstein, Ben.; N. Y. C.; Traymore
Fenner, Frank W.; New Haven, Conn.; Pennhurst
Feytel, Joseph L.; Newark, N. J.; Chalfonte
Fieldner, Arno C.; Pittsburgh, Pa.; Princess
Finn, John; Pittsfield, Mass.; Haddon Hall
Finnin, Robert E.; Boston, Mass.; Chalfonte
Fisher, Howell; Baltimore, Md.; Shelburne
Fitzgerald, John J.; Holyoke, Mass.; Traymore
Fleming, J. E.; New York City; Dennis
Fletcher, A. E.; Wilmington, Del.; Marl.-Blen.
Flor, A. W.; New York, N. Y.; Shelburne
Fonsica, Edw. L.; Newark, N. J.; Chalfonte
Ford, Herman F.; Brooklyn, N. Y.; Dennis
Ford, H. Stanley; Detroit, Mich.; Marl.-Blen.
Ford, Robert E.; Englewood; Dennis
Forstall, Alfred E.; New York, N. Y.; Chalfonte
Foster, David S.; Wilmington, Del.; Marl.-Blen.
Foureley, Jas. H.; Bound Brook, N. J.; Dennis
Fox, C. S.; New York City; Shelburne
Fox, M. C.; Phila., Pa.
Frack, Percy; Phila., Pa.
Freese, Fred W.; Chicago, Ill.
Frick, C. H.; Allentown, Pa.; Marl.-Blen.
Frederich, Mrs. A.; Newbrunswick, N. J.; Ch'fonte.
Fries, C. R.; Hackensack, N. J.; De Villa
Fritz, Edwin C.; Cleveland, Ohio; Ritz-Carlton
Fritz, H. C.; Cleveland, Ohio; Traymore
Front, Chas. H.; Poughkeepsie, N. Y.; Ambassador
Fulling, John L.; Phila., Pa.; Shelburne

G

Gallaher, A. J.; St. Louis, Mo.
Gallo, Joe; Brooklyn, N. Y.
Gardner, P. D.; Bayonne, N. J.; Dennis
Garland, John J.; Brooklyn, N. Y.; Traymore
Garrett, H. S.; Phila., Pa.; Knickerbocker
Gartland, T. H.; Toledo, Ohio; Iroquois
Gassett, A. L.; Cleveland, Ohio; Iroquois
Gatehouse, George W.; Brooklyn, N. Y.; Dennis
Georgeson, G. T.; Newark, N. J.; Chalfonte
Gere, Elmer L.; New York, N. Y.; Dougherty
Gillingham, H. D.; Montclair, N. J.; Dennis
Glass, Lester S.; Long Island, N. Y.
Gledhill, A. R.; Brooklyn, N. Y.; Dennis
Glover, C. B.; Phila., Pa.
Goldsmith, Clarence S.; Brooklyn, N. Y.; Traymore
Good, Milton; Allentown, Pa.
Goodman, F. G.; Brooklyn, N. Y.
Gordon, M.; N. Y. C.; Knickerbocker.
Graham, Henry M.; Phila., Pa.
Grant, Albert W., Jr.; Chicago, Ill.; Traymore
Graser, Ferdinand H.; Phila., Pa.; Ventnor
Graves, A. B.; Detroit, Mich. Traymore
Green, Albert; Phila., Pa.; Knickerbocker
Greene, Raymond L.; Brooklyn, N. Y.; Traymore
Greenleaf, Donald L.; Baltimore, Md.
Gret, Chester; Atlantic City, N. J.; S. Derby Pl.
Griffith, F. L.; Chicago, Ill.; Ambassador
Griggs, Edward R.; Camden, N. J.; Shelburne
Grimes, Georgg W., Jr.; Shelburne
Griswold, Robert G.; New York, N. Y.; Traymore
Grobie, J. C.; Anderson, Ind.; Ambassador
Gunn, S. L.; London, Ont.; Ambassador
Gwinner, Ernest E.; Ann Arbor, Mich.; Chalfonte

H

Haas, R. E.; N. Y. C.; Marlborough-Blenheim
Habfast, Charles; Burlington, N. J.; Dennis
Hackett, Francis; Quincy, Mass.; Phila., Pa.
Haggerty, John J.; Boston, Mass.; Chalfonte
Haight, William H.; Hackensack, N. J.; Dennis
Hall, George F.; Plainfield, N. J.; Haddon Hall
Hall, W. T.; New Orleans, La.; Shelburne
Halloran, R. J.; Phila., Pa.
Halwas, Geo. C.; Phila., Pa.
Hammer, E. J.; New York City; Ambassador
Handley, Wm.; Jackson, Mich.; Ambassador
Harding, Mr.; Chicago, Ill.; Ambassador
Hare, R.; N. Y. C.; Sterling
Haroldson, Harry C.; Pontiac, Mich.; Traymore
Harris, L. Martin; Morristown, N. J.
Harrison, J. W.; Hartford, Conn.; Chalfonte
Hartman, William C.; Nutley, N. J.; Traymore
Hartshorn, S. D.; Phila., Pa.; Dennis
Harvey, Fred A.; Pittsburgh, Pa.; Traymore
Haskell, W.; N. Y. C.; Eastbourne
Haslam, Robert Thomas; Cambridge, Mass.; Traymore
Hatch, A. B.; Boston; Marlborough
Hatch, P. M.; New London, Conn.; Ritz
Hawkins, O. J.; Decatur, Ill.; Ambassador
Hay, Albert V.; New York, N. Y.; Traymore
Hayward, C. B.; N. Y. C.; Royal Palace
Hedketh, J. B.; Hackensack, N. J. Dennis
Heiss, Laurence C.; Phila., Pa.; Knickerbocker
Heitsh, S. P.; Lancaster, Pa.; Eastbourne
Henning, Wm. N.; Albany, N. Y.; Craig Hall
Henderson, C. R.; Ann Arbor, Mich.; Chalfonte
Hennig, H. W.; Hoboken, N. J.; Plaza
Henderson, Louise; Atlantic City
Henkel, John A.; Joplin, Mo.; Traymore
Hepburn, W. M.; New York, N. Y.; Ambassador
Herrmann, E. W.; New York City; Brighton
Heyman, Nicholas Curtis; N. Y. C.; Traymore
Heywood, R. W.; Wash., D. C.
Hill, H. B.; Ontario; Chalfonte
Hilliard, G. H.; Birmingham, Ala.; Ambassador
Hilly, Arthur J.; Lynbrook, N. Y.; Ambassador
Histed, Geo. B.; Rochester, N. Y.; Marlborough
Hobday, J. H.; Cleveland, Ohio; Fredonia
Hoddick, V. C.; Rochester, N. Y.; Marl.-Blen.
Hodges, Earle W.; N. Y. C.; Traymore
Hoey, Robert W.; Kansas City, Mo.
Hoffer, H. A.; Phila., Pa.; Traymore
Hogan, Henry J.; Irvington, N. J.; Chalfonte
Hogg, J. W.; Phila., Pa.
Holborow, Edward; N. Y.
Holihan, Edw. P.; Atlantic Highlands, N. J.
Hone, Harry N.; Newark, N. J.; Dennis
Horn, Edw. H.; York, Pa.; Franklin
Horton, George Terry; Chicago, Ill.; Ambassador
Hostetter, Amos B., Jr.; East Orange, N. J.; Haddon Hall
Housel, James L.; South Amboy, N. J.; Dennis
Houston, Frank M.; Elmira, N. Y.; Ambassador
Howard, A. C.; Phila., Pa.; Runnymede
Howe, Charles T.; Brooklyn, N. Y.; Chalfonte
Howell, Alfred E.; Somerville, N. J.; Knick'bocker
Hoy, Chas. W.; N. Y.; Traymore
Hoy, R. W.; Allentown, Pa.; Marlborough
Hubbard, S. C.; Poughkeepsie, N. Y.; Chalfonte
Hueglin, H. C.; Chicago, Ill.; Traymore
Huestis, Leon D.; Portsmouth, Ohio; Marl.-Blen.
Hudson, L.; Stamford, Conn.; Marl.-Blen.
Huff, Wilbert James; Baltimore, Md.; Ambassador
Huffel, Mr.; Fishkill; N. Y.; Chalfonte
Hummel, H. B.; Wausau, Wis.; Ambassador
Humphrey, Harold E.; New York; Traymore
Hunter, Chas. W.; Phila., Pa.; Ritz-Carlton
Huyler, R. G.; Muncie, Ind.; Altemus

I

Irvin, Joseph; Atlantic City
Irwin, W. J.; Phila., Pa.; Marlborough-Blenheim

J

Jablin, A.; Brooklyn, N. Y.; Knickerbocker
Jacob, W. E.; Philadelphia, Pa.
Jacob, William T.; Manchester, N. H.; Chalfonte
Janney, J. A.; New York City; Traymore
Janney, Thomas Gordon; Chicago, Ill.; Traymore
Jardine, D. W.; Burlington, Vt.; Ambassador
Jares, Joseph; Brooklyn, N. Y.; Traymore
Jenkins, Paul A.; Chicago; Traymore
Jensen, Ben; Fords, N. J.; Strand
Jochum, Henry L.; Astoria, N. Y.; Dennis
Johns, Wade H.; New Brunswick, N. J.; Dennis
Johnson, Bernard L.; Chicago, Ill.; Ambassador
Johnson, Albin J.; Michigan; Ritz
Johnson, Chas. W.; Newark, N. J.; Chalfonte
Jolly, E. C.; San Antonio, Texas; Marl.-Blen.
Joly, Col. C. L.; New York City; Ritz
Jones, David R.; Flushing, L. I., N. Y.; Dennis
Jones, David Todd; Pottstown, Pa.; Larchmont
Jones, Edwin DuBose; Brooklyn, N. Y.; Traymore
Jones, Ivon R.; Jersey City; Marl.-Blenheim
Jones, Jacob B.; Bridgeton, N. J.; Ritz-Carlton
Jones, J. F.; Kingston, Pa.; Shelburne
Jordan, F. A.; Atlanta, Ga.; Traymore
Jordan, W. R.; Bangor, Pa.
Joslin, John A.; Atlantic Highlands, N. J.
Joslin, M.; Atlantic Highlands, N. J.

K

Kahler, H. A.; Bridgeport, Conn.; Marlborough
Kahn, Lucian L.; Hamilton, Ohio; Shelburne
Kalischer, L.; Brooklyn, N. Y.; Haddon Hall
Kay, Frank L.; Yonkers, N. Y.
Kelley, Charles A.; Plainfield, N. J.; Dennis
Kelly, Edw. D.; New Rochelle, N. Y.; Ambassador
Kemmerle, Harry; Burlington, N. J.
Kennedy, Thomas R.; Rochester, N. Y.; K'bocker.
Kenp, Robert; New York City
Kent, Edw. G.; Hoboken, N. J.; Dennis
Keys, Harvey A.; Pittsburgh, Pa.; Marl.-Blen.
Kilim, R.; Pittsfield, Mass.; Haddon Hall
Kirkpatrick, Geo.; Camden, N. J.
King, L. R.; Davenport, Iowa; Marlborough
King, Rufus; Jamaica, L. I., N. Y.; Dennis
Kingsland, Geo.; Boston; Marl.-Blenheim
Kirkconwell, John R.; Toronto, Ont., Canada; Cheltenham Revere

Kirkpatrick, J. P.: Wash., D. C.: Shelburne
Klaesius, P. K.: Baltimore, Md.: Traymore
Klein, Nathan: Philadelphia, Pa.
Klen, A. E.: Brooklyn, N. Y.: Ambassador
Kline, H. C.: Oak Park, Ill.: Traymore
Klinge, A. A.: Denver, Colo.: Traymore
Klyce, W. W.: Pontiac, Mich.: Traymore
Knapp, Edw. F.: Boston: Dennis
Koch, S. F.: Pittsburgh, Pa.: Ritz
Koenig, H. Lee: Conshohocken, Pa.
Kord, Edward F.: Boston, Mass.: Marl.-Blen.
Kraus, A. S.: Allentown, Pa.: Chalfonte
Krouse, H. B.: Pennsgrove, N. J.: Shelburne
Kruger, Richard E.: Rochester, N. Y.: Marl.-Blen.
Kunen, W. H.: Bayonne, N. J.: Knickerbocker
Kunze, Walter W.: Brooklyn, N. Y.: Dennis

L

Lambert, N. D.: Brooklyn, N. Y.: Breakers
Lamont, Hugh: London, Ont.: Ambassador
Lamson, W. O., Jr.: West Chester, Pa.: Shelburne
Lancaster, J. B.: Phila., Pa.
Lander, Richard F.: Tonawands, N. Y.: Traymore
Landis, B. L.: Harrisburg, Pa.: Franklin
Landmessee, W. E.: Phila., Pa.: Franklin
Lane, James M.: Jersey City, N. J.
Lane, P.: Muskogee, Okla.: Vendig, Phila., Pa.
Larson, Erick: Islip, N. Y.: Brighton
Latch, Wm. R.: Burlington, N. J.: Dennis
Lawlor, Edward A.: West New York, N. J.: Dennis
Lawton, William, Jr.: Richmond, Va.: Marl.-Blen.
Lear, David J.: East Boston, Mass.: Chalfonte
Learned, Harold G.: Middletown, Conn.: Haddon Hall
Learns, Chas. A.: Meriden, Conn.: Marlborough
Leatherman, Lloyd R.: Detroit, Mich.: Marl.
Lee, Raymond W.: Vineland, N. J.: Ambassador
Lefferson, L. R.: New York City: Shelburne
Lehman, Harry D.: Philadelphia, Pa.: Brighton
Lehnert, Frank J.: Trenton, N. J.: Dennis
Leichner, C. W. H., Jr.: Camden, N. J.: Shelburne
Lennertz, Casper C.: N. Y. C.: Ambassador
Lenox, Clark: Pittsburgh, Pa.
Leonard, W. J.: Brooklyn, N. Y.: Ambassador
Lesley, Robert W.: Phila., Pa.: Seaside
Lester, Lloyd R.: West Chester, Pa.: Shelburne
Levan, Milton B.: Philadelphia, Pa.
Lewis, Thos. R.: Quakertown, Pa.
Leyendecker, R. E.: N. Y. C.
Liepke, R.: N. Y. C.
Lightfoot, J. C., Jr.: Phila., Pa.: Haddon Hall
Limbach, John: N. Y.: Brighton
Lind, E. P.: N. Y. C.: Traymore
Lindey, Ray K.: Bristol, Conn.: Shelburne
Linzer, Chas. L.: Savannah, Ga.: Strand
Lioben, Ralph S.: Philadelphia
Lissauer, A. W.: Louisville, Ky.: Shelburne
Loebell, Henry O.: New York, N. Y.: Traymore
Longsdorf, John G.: Phila., Pa.: Marl.-Blen.
Lorengan, C. W.: Lynn, Mass.: Marl.-Blenheim
Lowe, W. W.: New York City: Ritz-Carlton
Luecders, C. J.: Lynn, Mass.: Chalfonte
Luickbocken, Chas. C.: Detroit: Ritz
Lynch, Jarvis D.: Glassboro, N. J.: Marl-Blen.
Lyons, B. C.: Belleville, N. J.: Haddon Hall
Lyons, T. J.: Rockford, Ill.: Traymore

M

McCampbell, C. A.: N. Y. C.: Chalfonte
McCandless, H. A.: N. Y. C.: Traymore
McCarter, Thomas N.: Newark, N. J.: Shelburne
McCarthy, Thomas J.: Brooklyn, N. Y.: Dennis
McClatchey, John K.: Phila., Pa.
McCorkle, J. B.: Ellwood City, Pa.: Ambassador
McIntyre, A.: Chicago, Ill.
McKenney, Geo. A.: Reading, Pa.: Strand
McKenzie, Schuyler: N. Y. C.: Marlborough
McKeman, T. N.: New York: Dennis
McDevett, James L.: Phila., Pa.
McIlravy, W. N.: New York City: Brighton
McKenna, J. H.: New York City: Shelburne
McKernan, T. W.: New York: Dennis
McKnight, J. J.: Pottsville, Pa.: Traymore
McPhail, R.: Adrion, Mich.: Traymore
Mackie, Jas.: Kingston, Pa.: Shelburne
MacArthur, Angus: Chicago, Ill.: Traymore
MacGines, J. J.: Wayne, Pa.: Brighton
MacGregor, H. P.: N. Y. C.: Marl.-Blenheim
MacSweeney, Joseph P.: Rochester, N. Y.: Marl.-Blenheim
Maguire, E. J.: Bronx, N. Y.: Marl.-Blenheim
Malcor, A. C.: Evanston, Ill.: Ambassador
Mallach, Jos. Wm.: Bay City, Mich.: Traymore
Malone, Peter K.: Gloversville, N. Y.: Chalfonte
Marsden, C. P.: Glen Ridge, N. J.: Haddon Hall
Martin, A. C.: Sharples, W. Va.: Marl.-Blenheim
Martin, A. F.: Sharples, W. Va.: Marl.-Blen.
Martin, Amelio H.: Coney Island, N. Y.: Chalfonte
Martin, Charles Ellison: Gardner, Mass.: Knickerbocker
Martin, John J.: Wildwood, N. J.
Mason, John A.: Baltimore, Md.: Shelburne
Maxwell, J. P.: St. Louis, Mo.: Brighton
Mayers, J. A.: Cumberland, Md.: Ritz-Carlton
Mayer, J. K.: Long Branch, N. J.: Marl.-Blen.
Meacham, B. E.: Lorain, O.: Ritz-Carlton
Meade, H. E.: New Orleans, La.
Meehan, Jas. J.: Pittsfield, Mass.: Chalfonte
Melville, Andrew H.: Greenwich, Conn.: Amb'dor.
Memory, N. H.: Newark, N. J.: Traymore
Mercer, H. V.: Middletown, O..: Marl.-Blenheim
Merkt, Theodore B. J.: Brooklyn, N. Y.: Dennis
Merrill, Harry E.: Tonawands, N. Y.: Traymore
Messenger, J. A.: Philadelphia, Pa.: Traymore
Metzer, F. F.: Phila., Pa.
Meyer, Henry C. A.: Baltimore, Md.: Chalfonte
Meyer, Gordon, Newark, N. J.: Ambassador
Michaels, L. B.: Pittsburgh, Pa.
Milener, Eugene D.: Baltimore, Md.: Ambassador
Miller, Allen S.: New York, N. Y.: Dennis
Miller, Frank E.: N. Y. C.: Knickerbocker
Miller, George: Plainfield, N. J.: Breakers
Miller, Geo. W.: Phila., Pa.
Miller, H. Harold: Gettysburg, Pa.
Missiner, Hilary: Phoenixville, Pa.: Monticello
Mone, H. L.: Phila., Pa.: Shelburne
Moore, Gilbert H.: Baltimore, Md.: Dennis
Moran, Eugene A.: Scranton, Pa.: Chalfonte
Morris, W. Cullen: New York, N. Y.: Traymore
Morrissey, John E.: Evanston, Ill.: Ambassador
Morrow, Chas. A.: Warren, O.: Ritz
Moth, W. L.: Cedar Rapids, Ia.: Ambassador
Mott, Abram C., Jr.: Phila., Pa.
Moller, B.: Coney Island, N. Y.: St. Charles
Mulford, Wm. C.: Bridgeton, N. J.: Ritz-Carlton
Mullarkey, J. J.: Camden, N. J.: Dennis
Muller, J. H.: New York, N. Y.: Strand
Mulligan, Jos. F.: Verona, N. J.: Haddon Hall
Munce, Geo. W.: Donagigac, Mich.: Ambassador
Muntree, C. B.: N. Y. C.: Marlborough-Blenheim
Murphy, F. F.: Pittsfield, Mass.: Haddon Hall

N

Nagle, Harry C., Jr.: Phila., Pa.
Naile, William: Reading, Pa.: Marl.-Blenheim
Napier, David W.: Bronx, N. Y. C.: Ambassador
Neilan, J. D.: Carbondale, Pa.: Marlborough
Nichols, C. B.: Phila., Pa.: Brighton
Nickles, Laurence, Elizabeth, N. J.: Haddon Hall
Nicholson, J. M.: N. Y. C.
Nicholson, R.: Phila., Pa.
Nieberding, A. A.: Cleveland, Ohio: Iroquois
Niles, H.: Jersey City, N. J.: Dennis
Norbury, Jos.: Phila., Pa.
Northrop, F. L.: Allston, Mass.: Chalfonte
Northrop, M. L.: Boston: Ritz

O

Ober, E. D.: Gloucester, N. J.: Traymore
Oberfell, G. G.: Bartlesville, Okla.: Ambassador
O'Brien, Jos. M.: Phila., Pa.: Knickerbocker
O'Brien, W. J.: Memphis, Tenn.: Ambassador
O'Donnell, J. L.: Cleveland, Ohio: Ambassador
O'Donnell, Mr.: Chicago: Ambassador
O'Hara, Donald W.: Schnectady, N. Y.: K'bocker.
O'Neil, Lester C.: Kackensack, N. J.: Dennis
O'Neill, Thomas A.: New York, N. Y.: Dennis
O'Neill, William P.: Rutherford, N. J.: Dennis
O'Neill, W. E.: Ithaca, N. Y.: Ambassador
Ormsby, John: Rochester, N. Y
Osgood, Lucines: Johnstown, Pa.
Oshoughnessy, James, N. Y. C.: Traymore
Osmer, Leon: Owosso, Mich.: Traymore
Otterbein, E. J.: Davenport, Ia.: Ritz
Owen, R. H.: Ontario, Canada: New Clarion
Owens, G. M.: Solway, N. Y.: Ritz
Oyster, E. E.: Cleveland, Ohio: Iroquois

P

Paff, James N.: Glassboro, N. J.: Shelburne
Parsons, Floyd W.: New York, N. Y.: Chalfonte
Patrick, W. A.: N. Y. C.: Ambassador
Patterson, Kingsley: St. Augustine, Fla.: Ambassador
Paul, Richard: New York City: Bryanton
Pawling, C. W.: Gloversville, N. Y.: Chalfonte
Palmatier, A. H.: Middleton, N. Y.: Marlborough
Edgar, H. T.: Pawtucket, R. I.: Marlborough
Peables, Bernard L.: Haverhill, Mass.: Marlb'gh.
Pearce, W. C.: Syracuse, N. Y.: Chalfonte
Pease, Luther M.: New Bedford, Mass.: K'bocker.
Penote, A. J.: Cleveland, O.: Ambassador
Penrose, Chas. A.: Syracuse, N. Y.: Ambassador
Pershall, J. R.: Chicago, Ill.: Ambassador
Peterson, Carl G.: Providence, R. I.: Chalfonte
Peterson, Gordon M.: Newark, N. J.: Haddon Hall
Perry, Fred: Nyack, N. Y.: Seaside
Pettengill, J.: Lansing, Mich.: Chalfonte
Pettingell, Andrew F.: Cambridge, Mass.: Traymore
Piatt, Joseph W.: Brooklyn, N. Y.: Traymore
Pigott, R. J. S.: Newark, N. J.: Dennis
Pitt, Howard: Jackson, Mich.: Traymore
Pond, H. O.: Newark, N. J.: Dennis
Pond, William A.: Astoria, L. I.: Dennis
Porter, Horace C.: Phila., Pa.
Post, E. J., Jr.: Phila., Pa.
Post, John B.: New York City: Chalfonte
Potter, John H.: Trenton, N. J.: Dennis
Potter, N. H.: Paterson, N. J.: Dennis
Potter, Ormsby F.: Newark, N. J.: Haddon Hall
Potter, T. J.: New York, N. Y.
Pountney, C. E.: Elizabeth, N. J.: Shelburne
Power, James F.: Worcester, Mass.: Shelburne
Preston, Ord: Wash., D. C.: Traymore
Prezzano, Edw.: Yonkers, N. Y.: Traymore
Priebe, Ernest B.: N. Y. C.
Pugsley, Edwin: New Haven, Conn.
Purdie, David J.: N. Y. C.
Purvis, Geo. R.: Chicago, Ill.: Ritz
Prichard, Charles R.: Lynn, Mass.: Traymore
Pruden, Andrew: Rutherford, N. J.: Dennis
Pratt, Arthur Winslow: E. Orange, N. J.: Wheeler
Price, Glendale M.: Camden, N. J. Shelburne
Pratt, S. Melvin, Clifton Springs, N. Y.
Priest, George H.: Brockton, Mass.: Chalfonte
Prindle, Ray: Mansfield, Ohio: Traymore
Prager, Arthur, Alberquerque, New Mexico: Amoassador

Q

Quaintance, Richard E.: Newark, N. J.: Dennis.
Quinlan, Thos. J.: New York City: Ambassador.

R

Rafferty, Richard A.: Chicago, Ill.: Ambassador.
Rainsbury, Chas. E.: Detroit, Mich.
Ramsey, T. M.: Phoenixville, Pa.: Monticello.
Rath, Thos.: Lorain, Ohio: Ritz-Carlton.
Raymond, J. S.: Chicago, Ill.: Ambassador.
Redfield, P. M.: Phila., Pa.: Shelburne.
Reed, C. S.: New York City: Traymore.
Reeder, M. J.: Chicago, Ill.: Ambassador.
Reid, Wallace R.: Phila., Pa.: Knickbocker.
Reimers, Bernard Frederick: Paterson, N. J.: Dennis.
Reinhardt, G. A.: Youngstown, Ohio: Ambassador.
Reyer, Edward G.: Columbus, O.: Ritz.
Riach, Wm. M., Jr.: Ambassador.
Rice, C. L.: Jackson, Mich.: Traymore.
Rice, Henry W.: New Britian, Conn.: Dennis.
Rice, Thomas: Dover, N. J.: Marl.-Blenheim.
Rich, E. A.: Norwich, Conn.: Ambassador.
Rich, Ira B.: Newark, N. J.: Ambassador.
Rich, William G.: Providence, R. I.: Ambassador.
Richards, C. I.: Poughkeepsie, N. Y.: Ambassador.
Richards, E. H.: Port Allegheny, Pa.: Ambassador.
Richards, Jack V.: Jersey City, N. J.: Shelburne.
Richardson, H. B.: Bayonne, N. J.
Richardson, R. B.: Glassboro, N. J.: Traymore.
Richman, H. H.: Philadelphia, Pa.: Ambassador.
Rider, E. F.: Oshkosh, Wis.: Ambassador.
Rinehart, H. C.: Paterson, N. J.: Dennis.
Riseley, Charles W.: Jersey City, N. J.: Dennis.
Risholm, C.: Revere, Mass.: Traymore.
Rivenburg, William C.: Phoenixville, Pa.: Brighton
Robertson, S. S.: Pittsburgh, Pa.: Chalfonte.Haddon Hall.
Robertson, W. L.: Skonhegan, Maine: Shelburne
Robinson, Harry G.: Newark, N. J.: Marl-Blenheim
Robson, Wm.: Phila., Pa.: Kingston Hotel
Roche, C. H.: Englewood, N. J.: Shelburne
Rockwell, G. W.: Sunbury, Pa.
Rockwell, W. M.: Ambassador
Rodgers, Paul C.: Cincinnati, Ohio: Traymore
Roemmelle, Howard Carl: Camden, N. J.: Shelburne.
Roesch, Fred M.: Brooklyn, N. Y.: Traymore.
Rogers, William E.: New York City: Shelburne.
Rohrs, Pauline L.: Ithaca, N. Y.: Ambassador.
Rook, T. E.: Rockford, Ill.: Traymore.
Rooney, Joseph Francis, New York: Traymore.
Rose, Harold J.: Pittsburgh, Pa.: Traymore.
Roser, F. R.: Phila., Pa.
Rowe, Thos. D.: Ithaca, N. Y.: Ambassador.
Rubl, Geo. W.: St. Louis, Mo.: Traymore.
Runmann, Frank L.: Hammond, Ind.: Ambassador
Rusby, John M.: Phila., Pa.: Shelburne.
Russell, C. W.: Binghampton, N. Y.: Traymore.
Rust, Geo.: Salt Lake City, Utah: Traymore.
Rust, W. F.: Pittsburgh, Pa.: Traymore.
Rutledge, J.: Philadelphia, Pa.
Ruud, Edwin, Pittsburgh, Pa.: Ritz.
Ryan, Bernard, New York, N. Y.: Pennhurst.
Ryan, Paul A.: Cambridge, Mass.: Ambassador.
Ryeholm, John O.: Chicago, Ill.: Ambassador.

S

Sampson, A. W.: Boston, Mass.: Chalfonte-Haddon Hall.
Sanford, H. S.: Pittsburgh, Pa.: Ambassador.
Sangster, William: Danielson, Coon.: Ambassador.
Saumacher, Parquale: New York City: Traymore.
Sayer, John D.: St. Louis, Mo.: Ambassador.
Schaof, A. H.: Brooklyn, N. Y.: Dennis.
Scheller, John Arthur: Newark, N. J.: Dennis.
Schell, Earl H.: Philadelphia, Pa.
Scherer, George F.: New York City, Chalfonte.
Schloss, S. P.: Cleveland, Ohio: Ambassador.
Schmidt, William J.: New York City: Marlborough-Blenheim.
Schneider, J. G.: Phila., Pa.: Franklin.
Schnuder, F. G.: Islip.N. Y.: Brighton.
Schoneberger, A.: Brooklyn, N. Y.: Traymore.
Schrader, Lloyd F.: New York.
Schutt, Everett V. K.: Kingston, N. Y.: Had. Hall.
Schreck, M. G.: Ridgewood, N. J.: Plaza.
Schuck, Conrad, Jr.: East Orange, N. J.: Marlborough-Blenheim.
Schwaab, Theo. F.: Baltimore, Md.: Traymore.
Schwab, G.: Elizabeth, N. J.: Knickerbocker.
Schwabe, Walter P.: Thompsonville, Conn.: Traymore.
Schwabach, J. A.: Chicago, Ill.: Ambassador.
Schwartzer, Paul W.: York, Pa.: Strand.
Scott, Frank, New York City: Strand.

Scott, L. A.; Greensboro, N. C.; Marl.-Blenheim.
Scott, John J.; Lewiston, Maine; St. Charles.
Scott, John M.; Wilmington, Del.; Dennis.
Scott, Walter E.; Newton, Pa.
Scranton, George; Derby, Conn.; Chalfonte.
Scranton, Geo. H.; Derby, Conn.; Chalfonte.
Scranton, Worthington; Scranton, Pa.; Haddon Hall
Sebald, H. A.; Coldwater, Mich.; Breakers.
Secord, W. L.; New Rochelle, N. Y.; Traymore.
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Seitz, F. W.; Camden, N. J.
Serrill, Wm. J.; Philadelphia, Pa.; Brighton.
Servan, R. Earl; Phila., Pa.
Severson, S. B.; Buffalo, N. Y.
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Shay, Thos J.
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Shevlin, J. W.; Phila., Pa.
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Skinner, Herbert H.; Poughkeepsie, N. Y.; Chalfonte.
Shober, P. H.; Phila., Pa.; Ventnor.
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Shuld, U. P.; Schnectady, N. Y.; Ambassador.
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Snyder, William J.; Baltimore, Md.; Brighton.
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Sperr, Frederick W., Jr.; Pittsburgh, Pa.; Traymore.
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Starr, F. C.; Phila., Pa.; Ambassador.
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T

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Waff, H. J.; Cleveland, Tenn.; Knickerbocker.
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Wells, Frederick H.; New York, N. Y.; Shelburne.
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Whitcomb, E. C.; Pittsburgh, Pa.; Ambassador.
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White, Martin J.; West Hoboken, N. J.; Ambassador
White, R. W.; New York City; Brighton.
White, W. A.; Chicago, Ill.; Marlborough.
White, Wm. J.; Millville, N. J.
Whitfield, Geo. W.; Richmond, Va.; Fredonia.
Whitock, D. N.; Chicago, Ill.; Marlborough.
Wicht, A. H.; Far Rockaway, N. Y.; New Belmont.
Wiley, Lewis J.; Jersey City, N. J.; Colton Manor
Willard, Wm. Gash; O'Fallon, Ill.; Knickerbocker.
Williams, L. S.; Harrisburg, Pa.; Marlborough.
Williams, Thomas B.; Elmira, N. Y.; Ambassador.
Wilson, C. J.; Glassboro, N. J.; Shelburne.
Wilson, Dustin W.; New York City; Ambassador.
Wilson, Fremont; New York City; Marlborough.
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Wilson, W. G.; Baltimore, Md.; Marlborough.
Wilson, Walter H.; New York City; Marlborough.
Winter, C. N.; Ridgewood, N. J.; Brighton.
Wirth, C. K.; Detroit, Mich.; Traymore.
Wishnevrxy, A.; Philadelphia, Pa.; Shelburne.
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Wolters, Richard H.; New York, N. Y.; Princess.
Woodall, H. A.; Philadelphia, Pa.
Woollen, C. E.; Baltimore, Md.; Breakers.
Woller, Oswald C.; Brooklyn, N. Y.; Dennis.
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Wood, O. A.; Geneva, N. Y.; Ambassador.
Woodhead, F. A.; Arlington, Mass.; Haddon Hall.
Woodward, J. A.; Illinois; Ambassador.
Woodward, R. S., Jr.; Staten Island, N. Y.; Breakers.
Woodward, Wm. F.; Fulton, N. Y.; Ambassador.
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Wright, C. J.; New York, N. Y.; Ritz-Carlton.
Wright, R. A.; New York City; Ritz.
Wright, Wm. H.; New York, N. Y.; Marlborough-Blenheim.
Wright, Wm. A.; Boston, Mass.; Chalfonte-Haddon Hall.

Y

Yeaton, Goeffrey B.; Philadelphia, Pa.; Shelburne.
Yeomans, B. B.; Rochester, N. Y.; Marlborough-Blenheim.
Young, Charles Allen; Brooklyn, N. Y.; Dennis.
Young, H. B.; Chicago, Ill.; Traymore.
Young, H. E.; Minneapolis, Minn.; Traymore.
Young, Peter; Watertown, N. Y.; Ambassador.
Young, S.; Kalamazoo, Mich.
Yunker, James A.; Louisville, Ky.; Breakers.

Z

Ziegh, W. N.; Cleveland; Shelburne.
Zingg, J. P.; Orange, N. J.

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Selling Gas for House Heating*

Report of house heating committee

H. Leigh Whitelaw

Chairman, American Gas Products Company, New York City

THE following report of your House Heating Committee is the result of a faithful effort on the part of its individual members. The scope of this committee's activity, as indicated by the varied subjects covered, and the many different angles of the problems to which attention has been directed, leads the chairman to hope that it will prove a valuable addition to the fund of knowledge that the commercial section and other sections of the association have gathered bearing on problems before the industry.

In extending sincere thanks to every member of this committee, who alone are entitled to the real credit, the chairman recommends, as the most important field of future activity, an intensive and comprehensive study of the subjects outlined in section 3 of this report.

Building upon the work of the previous committee, under the able leadership of Mr. E. P. Bailey, Jr., this year's committee has endeavored, among other things, further to define the advantages of a clear-cut commercial policy and to show how this is the basis for all successful selling of house heating.

We believe that a survey of the individual sales policies of all gas companies engaged in the promotion of house heating, and their classification under certain basic headings, would be of inestimable value to every company interested in this field of gas utilization and to the manufacturers who are co-operating with the gas companies in furthering the sale of house-heating equipment.

We also urge that the succeeding committee make a further and more thorough canvass and compilation of the statistics of present house-heating installations so as to bring up to date and complete the data given in section 4B of this report.

Necessarily in a report prepared by several individuals, such as this, the papers will to a certain extent reflect the particular experience of the writers. Although most of these papers have been discussed by the entire committee and have been revised (and so represent the majority of opinion) we have thought it wise to credit each paper to the man preparing it so that his authority and experience may be shown in connection with his material.

*Delivered before the Wednesday meeting of the Commercial Section, A.G.A. Convention, Atlantic City, October 11-15, 1926

Character of Home Ownership or Rental

How does it affect sales possibilities for central house heating with gas?

ELIMINATING the vast number of poorer classes, tenement dwellers in the large cities, immigrants, public charges, etc., we have to deal with two general classes of home owners:

1. Families of moderate means with incomes of from $5,000 to $15,000.

2. Wealthy home owners with incomes of from $15,000 to $150,000 for example.

The former class is in the great majority, and therefore constitutes the greatest potential market for house heating. Most of these own homes on first and second mortgage, purchase automobiles and household equipment on time payments, carefully budget expenditures and succeed in saving a small sum each year.

Home ownership with them means a responsibility, a duty, and usually a pleasure. They are for the most part sold on the idea of labor-saving devices, adequate lighting and electric wiring, good building materials, plumbing and heating, in so far as national advertising has succeeded in influencing them in this direction. Such families by the character of home ownership thus indicated are the most logical and active prospects for the sale of central house heating with gas, provided the story of gas heating is carried to them with the same vigor, effectiveness, and persistency as marks the consistent activity of the present manufacturers of household equipment. These familiies, and there are hundreds of thousands, are ripe to accept the message of gas heating, but they cannot be expected to swallow it whole. The first automobile, vacuum cleaner, and washing machine did not receive instant public acceptance.

Lack of understanding of gas as an industry and as a fuel is a serious stumbling block to a ready acceptance of gas for heating and is one of the factors which points to the necessity of education in fundamentals as a foundation upon which to build a concrete idea of the essential utility and convenience of gas as a house heating medium.

To sum up briefly the character of present-day home ownership is such as to offer a potentially fertile field for the sale of gas house heating to families of moderate means, but the development is held back

because the gas industry as a whole has not grasped the national significance of the service it has to render, and has failed thus far adequately to sow the educational seed so necessary to a reaping of the heating harvest that most certainly awaits it.

Effect of Home Rental on the Sales Possibilities for Central House Heating With Gas

While there are a large number of families living in rented dwellings or apartments, and while the general character of such people, financially, intellectually, or morally is as high as those who own their own homes, this class cannot be considered to offer an important field for gas heating sales.

This is primarily because they have deliberately dodged the responsibility of ownership and as a class are content with conveniences as are supplied by the landlord in exchange for greater freedom from the cares that home ownership naturally entails.

The potential market in this field is the owner or lessee of the property, but usually a pretty poor prospect for gas heating and, as a class, hardly worth the effort that can be applied with so much greater effectiveness to those who own and are building their own homes.

What the House Heating Business Means to the Gas Company

P. M. Wentworth

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THE two subjects to be covered are so interdependent that it seems advisable to endeavor to handle them as one rather than to separate them into two distinct discussions. It is also unfortunately self-evident that in discussing either of the subjects, the embarrassing and hotly argued question of rate intrudes itself, since earnings and revenue of a gas company involve rate, first, in the amount collected for the gas sold, and second, particularly in the matter of house heating, in the total amount of gas sold. It is to be definitely understood that this discussion applies to manufactured gas only.

There appears to exist at present in the gas industry two distinct schools on the question of manner of developing house heating business. The one school favors obtaining some small amount of house heating business at rates which will be compensatory on an exact allocation of costs and overheads and is fundamentally based on the idea that, by reason of the necessarily relatively high rate, the volume of business will be held down to a point where the winter peak is less than the summer peak and the business is, therefore, off-peak load. The second school favors going into the house heating business on a large scale, building up a considerable house heating load by offering a rate lower than could be justified with any theoretically correct allocation of costs and overheads. This method is already resulting in a number of cases in winter peaks far in excess of summer loads. The effects of the two distinct methods of approach are that, in the one case, a rate carrying all costs and overheads result in the gas sold being off-peak load; in the other case, a rate admittedly not carrying its full share of costs and overheads results in the gas sold being very decidedly peak business. Neither of these results is desirable and the purpose of this paper is to start an argument which may result in determining which is less undesirable.

It seems to be generally agreed that, to obtain really large volume of house heating business, a low rate is necessary. This point is emphasized by the Prospects Curve included in this report. As to how low a rate is necessary, that point must naturally be decided by each company for itself, based on its own conditions. However, in general it appears to be a fact that companies endeavoring to obtain house heating load in volume are offering rates ranging from 75 cents to 85 cents per thousand.

Presumably gas company executives are all working primarily to produce dividends and maintain stock values. It, therefore, seems the logical thing to approach the question purely from this angle, recognizing that in house heating we are even more directly in competition with coal and oil than in the domestic cooking business and also recognizing that under the most favorable conditions, house heating by gas will be a luxury.

Figures Based on Special House Heating Rate

To this end figures will be used which have been obtained from a company which has had in effect for three years a house heating rate of 75 cents per thousand. This particular company is used because, owing to the relatively large per cent. of its total business made up of house heating, the effects of house heating business are more easily ascertained than in other companies where the percentage of house heating gas sales is smaller. The company in question has an annual output of approximately 600,000,000 cubic feet and on January 1, 1926, 110 house heating installations were in use. Definite figures have been used because it is felt that to mean anything definite figures must be used rather than generalities. If the general theory is approved the figures can be easily replaced by those of any other company which may be considering the question.

Since everyone agrees that up to the present the business is desirable and that any company can at first show bigger dividends with the business at 75 cents than without the business at all, no time will be wasted on present conditions except in so far as present results are helpful in predicting the future. We will, therefore, jump immediately to the time when the house heating business reaches the same relative saturation as the regular domestic gas business now has reached.

It was estimated, based on total population, total persons having incomes over $5,000 per year, local knowledge of the percentage of these citizens who are willing to invest money for comfort and, to be real honest, on a good round guess, that a total of 500 house heating installations could be sold at a 75 cent rate and that this condition might be attained by January 1, 1925. Experience up to the present bears out this estimate.

Costs

It is quite evident to some companies (and not at all evident to others) that we cannot even hope to make house heating pay out on any theoretically correct division of full costs and plant overhead as between it and the regular gas sales. However, we are discussing not theory but the practical effect on dividends and stock values. Therefore, if with house heating at 75 cents the company can pay greater dividends than without it and also by means of additional stock rights improve or at least maintain the market value of its stock, it is good business from the stockholders' point of view. Such being the case, in this discussion we will deal only with increment costs, both in expenses and overhead.

For the months of November, December, January and February just passed, it cost this company for boiler fuel, generator fuel, oil, and purification material an average of 34.8 cents per thousand. There is no reason to expect any definite increased efficiency from the increased make and size of units required by the house heating load. From this figure we should deduct the value of Residuals Produced which for 1924 and 1925 has averaged 2.6 cents per thousand and if anything is actually slightly higher than this figure. Making this deduction we have a net material cost of 32.2 cents per thousand.

Before going into the other increment production costs, it is necessary to consider what plant will be in operation in 1935 with the boiler load and what plant would be in operation at that time without it. From these two set-ups a fairly clear idea can be obtained of the additional (and additional only) plant labor made necessary by the house heating load.

1935 Estimated Load

Without any house heating load, but with the expected normal increases in regular business, the company should have in 1935 a maximum month of 77,100,000 cubic feet and based on past experience this should result in a maximum day of approximately 3,090,000 cubic feet. For this load in view of its existing plant the company would probably have installed one 11-foot set, one 10-foot set and one 8-foot 6-inch set, using only the 11-foot set for normal operation. On the other hand with 500 house heating installations in service in addition to normal increases, it would have in 1935 a maximum month of 126,200,000 cubic feet and a maximum day of not less than 5,060,000 cubic feet. We say not less than 5,060,000 cubic feet because experience to date has not been sufficient to make it certain that the past ratio of maximum day to monthly send-out will hold with a large proportion of the total sales made up of house heating and it is more than likely that, owing to the relatively poor load factor of house heating, the maximum day will exceed 5,060,000 cubic feet considerably. This, however, is not serious as any reasonable increase in this item will not affect these figures. For a maximum day of 5,060,000 cubic feet there should probably be installed two 11-foot sets and one 10-foot set, using two of the sets regularly. From Curve I it also appears that it would only be necessary to operate the two sets six months in the year.

From these two set-ups it is clear that the only serious items of additional expense involved in house heating load in 1935 are generator house labor (operation and cleaning crew), purification labor and generator maintenance. Purification labor and generator maintenance vary approximately with output, and average .4 cents and .9 cents respectively. The increased generator house labor for house heating will be one extra operator for 3 shifts and extra cleaning labor amounting to possibly 50 per cent. of one cleaning gang. This will be required for 6 months in the year and the actual added cost will be $8,100 per year, which on the basis of 250,000,000 cubic feet of house heating gas will be 3.2 cents per thousand. There will also be necessary some additional labor in the plant such as additional supervision, coal handlers, plant engineers and maintenance men and possibly some additional compression charges with the increased output, and while these charges cannot be definitely figured, an additional 2.0 cents per thousand should cover them.

Distribution Costs

Under distribution costs it appears that the distribution system will be increased 10 per cent. as shown later. Assuming that the distribution expenses increase in the same ratio, the charge against house heating gas would be 1.5 cents per thousand.

On the question of utilization costs, with 110 boilers in use, it is costing approximately $1,000 per year for regular boiler inspection and in addition an average of 4 service calls per boiler per year are made at a cost for labor and transportation of $15.70 per year or 3.1 cents per thousand. This cost is altogether too high, but is due to the fact that with the house heating industry still on trial gas companies are leaning over backwards in the matter of giving present customers every possible attention without charge. With 500 boilers in use, the service can be very much better organized with a resulting decrease in cost per thousand. It therefore seems reasonable in figuring 1935 costs to use some lower figure and 2.0 cents per thousand should cover the item. In fact, if worst comes to worst, it will be possible to reduce this figure to less than 1.0 cents by placing

all service calls on a charge basis with the exception of a regular inspection service. This change, however, would be a very radical departure from present practice and it is to be hoped will never become necessary. It would not fit in well with sales talks to house heating prospects.

Commercial Expense

Commercial expense is now approximately $2.00 per customer per year for all customers. On house heating, due to the special conditions of reading and billing, this would be increased somewhat, but since this only represents .3 cents per thousand on a 9 months basis, it is hardly worth while making any corrections.

New Business expense instead of being a charge is up to the present and from the increment cost point of view, a credit. However, in the future, with only 40 new installations expected per year, at the present average profit of $67 per boiler, merchandise revenue will fall short of covering sales costs by approximately $1,000.

It is felt, therefore, that serious consideration should be given to adding 10 per cent. to the list on boilers under which arrangement the boiler sales will continue to more than carry their selling cost. It does not seem probably that this added 10 per cent. will result in any lost sales. In any event it does not seem reasonable that any charge against the rate should be made to cover New Business expenses in view of the showing to date and prospects for the future.

Aside from charges under Transportation which have already been provided for under costs of servicing boilers, no General Expense accounts are affected by house heating.

Summary of Costs

Summing up all the above costs, we have as the added cost per thousand for house heating business:

32.3 Fuel, etc., less Residuals Produced.
1.3 Purification labor and generator maintenance.
3.2 Operating Labor.
2.4 Miscellaneous labor and cost of.
1.5 Distribution Labor.
2.0 Utilization.
.3 Commercial Expense.

42.9

It is estimated that it will be necessary on account of house heating to increase the distribution system by something less than 10 per cent. in feet of main. Although a considerable part of the increase will be high pressure boosters, there is no reason to believe that this should increase the per cent. leakage. The present leakage averages about 7.5 per cent. and an increase of 10 per cent. should increase this a corresponding 10 per cent. However, the increase in house heating costs will be greater than 3.4 per cent. because the increased leakage will apply to all gas sent out or 1,135,000 M. The increased leakage on 1,135,000 M sent out is 8,520 M, which applied to house heating sales of 250,000 M gives us an unaccounted for correction of 3.4 per cent., which applied to fuel cost and generator labor only, brings the above cost per M up to 44.4 cents.

Overhead Charges

This brings us to the all-important part of this discussion and incidentally the part which is most complicated and most indefinite, the question of overheads, which in these figures includes interest, depreciation and taxes.

It would appear that the clearest method of dealing with this is to consider that, during the development period of house heating up to January 1, 1935, the house heating business be treated as a separate corporation, keeping and using its own revenues and borrowing additional money as necessary from some supposedly available source and being charged with every item, both in operating expenses and carrying charges, which would not have accrued had there been no house heating load. Then on January 1, 1935, this subsidiary is to be surrendered to the company proper in return for the company proper assuming any outstanding indebtedness, the indebtedness being retired by the sale of additional stock of the regular company.

To follow out this assumption, it is first necessary to estimate what the September maximum days would have been each year up to 1935 without house heating and what the January maximum days would have been for each year with house heating.

	Without House Heating	With House Heating
1927	2080	2600
1928	2190	3000
1929	2300	3200
1930	2400	3570
1931	2530	3850
1932	2660	4150
1933	2830	4450
1934	2960	4750
1935	3090	5060

From these maximum days it is determined when various parts of the plant must be replaced with large units or new units added, taking house heating into consideration and when they would have had to be replaced or added to, had there been no house heating load.

Based on the estimated maximum days the construction budget for the house heating subsidiary can be made up as shown by the following table:

Discussion of Table

Column I of this table shows that in 1927 it will be necessary because of house heating to replace one 8-foot-6-inch set with an 11-foot set at an estimated cost of $225,000, including necessary accessories, the replacement being necessary because in 1928 the maximum day will be 3,000 M or more than the capacity of our two 8-foot-6-inch sets. In 1932 it will be necessary to replace the remaining 8-foot-6-inch set with another 11-foot set or else simply add an 11-foot set, again at a cost of $225,000, because in 1933 the maximum day will exceed the capacity of the 10-foot and 8-foot-6-inch set. Then in 1933 the regular load has grown to a point where it, in itself,

	Plant Equip.	Holders	Mains	Ser. & Meters	Total	Cumulative
1924	$ 0	$ 0	$ 0	$ 4,350	$ 4,350	$ 4,350
1925	0	0	0	9,050	9,050	13,400
1926	0	0	3,000	6,800	9,800	23,200
1927	225,000	200,000	5,000	6,200	436,200	459,400
1928	.....	**135,000**	10,000	5,600	**119,400**	340,000
1929	.....	0	15,000	5,000	20,000	360,000
1930	.....	0	16,000	5,000	21,000	381,000
1931	.....	0	16,000	5,000	21,000	402,000
1932	225,000	0	16,000	5,000	246,000	648,000
1933	**225,000**	0	16,000	5,000	**204,000**	444,000
1934	0	0	16,000	5,000	21,000	465,000
1935	**120,000**	.....	.....	....	**95,600**	369,400
	24,400					
	$129,400	$ 65,000	$113,000	$62,000	$369,400	

would have required the replacement of the first 8-foot-6-inch with an 11-foot set and, therefore, the regular business takes over the first 11-foot set assuming its overhead, and the house heating corporation receives back the $225,000, which it spent in 1927. Incidentally it will be noted that the credit is for the full original cost without any accrued depreciation. This, it is felt, is correct since the retirement service to make good this depreciation is being kept intact as shown in a later table and will be turned over to the regular business later.

The final credit of $120,000 in 1935 in this column records the fact that in 1935 when the house heating corporation is taken over, it has an 11-foot set and accessories with a capacity of 3,300,000 per day whereas except for the house heating load there would be installed in its place an 8-foot-6-inch set which, in 1935 would be 20 years old. It is estimated that the 8-foot-6-inch set would cost $150,000 to replace with accessories and on the basis of a 25 year life, the regular business would have charged off 80 per cent. of the original cost of this set assuming that the usual methods of handling Retirement Reserves are correct and that the amounts set aside are sufficient to cover actual depreciation. House heating should, therefore, be charged with the unaccrued percentage, but with the percentage applied to the cost to replace. This results in house heating receiving the benefit of cheap capacity by being allotted the last 1,700 M cubic feet per day of a 3,300 M cubic feet per day generator. Since the portion of the maximum house heating day chargeable against house heating will be 1,960,000 cubic feet, the difference in capacity between an 8-foot-6-inch set and an 11-foot set, which is 1,700,000, is not sufficient to serve all the boiler load. Therefore, house heating is also charged with a portion $\frac{(260)}{(1600)}$ of the estimated cost of the 8-foot-6-inch set, or $24,400.

In the second column a new 2,000,000 cubic foot holder is added in 1927, being made necessary so soon by house heating. Then in 1928 the regular business would have required a new holder, but in view of probable growth without house heating, it is reasonable to think that only a 1,000,000 cubic foot holder would have been erected, which would have cared for an additional 10 year growth. Therefore, house heating is only credited with $135,000, the estimated cost of the million foot holder, but does receive the benefit of unusually cheap storage by reason of installing a 2,000 M instead of a 1,000 M holder, but again the regular business is in no way carrying any more charges than it would have carried had there been no house heating.

Increase in Main Investment

The total estimate of $113,000 for increase in main investment represents roughly 10 per cent. of the cost of the present distribution system. It has been found true in a number of representative gas companies after very complete investigations that the capacity of a distribution system can be doubled and in some cases tripled by an investment not to exceed 10 per cent. of replacing the existing system. If this holds true in general, 10 per cent. is particularly liberal in this case since house heating installations are very well bunched in two or three sections of a city and the cost of increased main capacity is, therefore, cheaper than for a general increase of a whole system. Also it is not necessary to double the present main capacity, but only to increase it 55 per cent. In this present case, also, this figure was roughly checked and on the basis of the necessary high pressure system with suitable compressor, an allowance of $113,000 would leave $57,000 for necessary strengthening of low pressure mains which seems liberal. This very low cost of increasing main capacity is, of course, one of the primary causes of making 75-cents house heating business profitable, if it is shown to be profitable.

The column of services and meters is based on the number of installations sold each year, allowing $89 per service and $35 per meter in place which are actual costs during recent years.

The total of all the above shows a net investment

on January 1, 1935, of $369,400 to cover all plant required at that time by house heating.

From the construction budget has been figured the financial results of the house heating corporation by years, including revenue, operating charges, overhead on the new plant required, including interest on the new cash invested and depreciation and taxes on the new plant installed. This is shown in the following table which is really nothing more or less than a Development Cost Table such as is made up by experts in rate cases to determine Going Concern Value and which is then thrown out by the court.

	Boiler Rev.	Reg. Costs	Added Oper. Costs	Int. @ 8%	Rep. & Taxes @ 6%	Bal.	New Plant	Cash Req. for year	Cumulative Cash Requirements
1924	$ 3,850	$ 1,855	$ 0	$ 0	$ 0	$ 1,195	$ 4,350	$ 2,355	$ 2,355
1925	23,600	11,680	0	188	261	11,471	9,050	2,421	66
1926	48,000	23,700	0	5	804	23,501	9,800	13,701	13,766
1927	61,800	30,600	0	1,100	1,392	30,908	436,200	405,292	391,526
1928	81,700	39,800	2,150	31,300	27,600	19,150	119,400	100,250	291,276
1929	97,500	48,200	3,900	23,302	20,400	1,698	20,000	18,302	309,578
1930	112,500	55,700	6,000	24,766	21,600	4,434	21,000	16,566	326,144
1931	127,500	63,000	8,500	26,092	22,850	7,058	21,000	13,942	340,086
1932	142,500	70,500	11,200	27,207	24,100	9,493	246,000	236,507	576,593
1933	157,500	77,800	12,400	46,127	38,900	17,727	204,000	186,273	390,320
1934	172,500	85,200	13,580	31,266	26,650	15,844	21,000	5,156	395,476
1935	.....	.....	.....	.....	.....	.....	95,600	95,600	299,876
					184,567	.....	369,400	299,876	.....

Details in Table

It will be seen from this table that the house heating carries overhead of 8 per cent. on all money borrowed and 6 per cent. on cumulative plant devoted to house heating, the 6 per cent. being made up of 3 per cent. depreciation and 3 per cent. taxes. The New Plant column agrees with the Total column in the preceding table. Technically the credits for plant becoming necessary for regular business should allow for accrued depreciation at the time of the return and the depreciation annuity should have been shown as being reinvested in plant. However, this became too complicated so the accrued depreciation reserve has been shown as being kept intact which would, therefore, offset any accrued depreciation. This, it is believed, gives the correct result more simply.

It will of course at once be seen that a part of this favorable showing is due to small added investment required in the first four years. No doubt opponents will call attention to this and claim that the favorable result is due to using figures based on a company with existing surplus capacity. In answer to this:

First, it will probably be agreed that there is no company in the world in which every element of generating plant, holders and distribution system is operating at capacity, therefore this first favorable showing is always bound to occur to a greater or less extent.

Second, even if there were a company with all parts of its plant operating at capacity, it must follow that this condition would be changed within the next year or two; therefore the saving for house heating would be postponed by this same period.

Three Important Factors Defined

From this it will be seen that the three important factors in making possible house heating by gas at low rates are first, relation of plant capacity (including proportional balance between various parts of plant) to existing demand, rate of growth of regular business and the low cost per unit of additional distribution capacity.

It is probable that when the property of the temporary corporation was taken over at the end of period studied, this floating indebtedness would be retired by the company by means of a sale of stock. On the basis of the present market price of stock of a number of New England gas companies ($47-$50) on a $25 par, the stock would probably be sold to the stockholders at about $35, which differential through its rights value would certainly not have an adverse effect on the market price of the stock. On this basis to retire the floating indebtedness would require issuance of 8,570 shares of stock. To provide for selling costs, suppose this was increased to 9,000 shares which would easily be supported by the new plant investment and let us use $2.50 per share as a dividend basis.

From the figures shown above there would be in 1935 a net income before taxes available for dividends, depreciation, taxes and reserves of 250,000 M × (75 cents—44.4 cents) or $76,500 per year from house heating alone. This would be distributed on the following basis:

$22,500—$2.50 annual dividend on 9,000 shares.
11,070—Increase in annual transfer to Retirement Reserve.
11,070—Increase in taxes at $30 per $1,000.
31,860—Available for Surplus.

$76,500 Total.

The figure of $11,070 for Retirement Reserve represents 3 per cent. of $369,400, the total cost of new plant. As a check on this figure, on the basis of the ratio of 1925 transfer to Retirement Reserve to Gross Earnings of a number of gas companies, the charge for this item against 1935 house heating would be only $10,320.

One probable and peculiar result of the prospective characteristics of the load curve is that an effort must be made later under the conditions assumed to obtain some summer industrial load which can then be taken on profitably at a very low off-peak rate. This, of course, will place the company in the anomalous position of having an off-peak house heating rate for the winter months and an off-peak industrial rate in the summer months. In other words, off-peak gas is to be sold 24 hours a day and 12 months in the year and at a profit.

Conclusions

The figures brought out, if true, would seem to indicate:

1. That house heating load at 75 cents per M represents profitable business and should be gone after vigorously as representing probably the most profitable and most easily obtained outlet for new gas sales in the future.

2. That, because of hourly load characteristics, companies should favor steam installations rather than hot water installations. Possibly warm air installations may be found to be preferable even to steam, but to date we have not sufficient data to know definitely.

3. That companies should seriously consider specifying in their rate that no change can be allowed in house temperature between day and night. There is some question as to how much this rule will increase the customers' consumption, but it certainly eventually will decrease his annual gas bill since without this rule, it is quite certain that with large house heating loads, the rate per M must be higher than without the regulation.

4. That we should consider selling boilers installed at 10 per cent. over the list price. This last item is, of course, of very minor importance, representing only $2,000 per year at the outside for the company used as an example.

As stated in the beginning, throughout this reasoning care has been used to make sure that regular business should not in any way carry any expense or overhead which it would not have been under had there been no house heating. If the reasoning is correct, then the showing of 10 per cent. dividends, plus proper retirements and an annual increase in surplus of $31,860 certainly is to the advantage of the stockholders or, if as eventually it must, it either makes possible a reduction in rates or prevents a raise in rates, otherwise necessary, then it is decidedly to the advantage of the customers.

In any case, it seems to be the general feeling in the industry that in the near future we will be compelled to take on the house heating business whether we wish to or not.

Fuel Competition in House Heating Field

H. Leigh Whitelaw

American Gas Products Corp., New York

WHEN we think in terms of large quantity consumption of gas, from the standpoint of the consumer, we are accustomed at once to look at the economic side of the subject and question the dollars and cents profit to the buyer. Gas for industrial use is largely sold on a basis of competition with other fuels.

However, it must be recalled that house heating is an entirely domestic field of utilization and is not purchased by consumers primarily on a basis of economy or profit, but is rather a matter of luxury or (more usually) of convenience and necessity.

It might be possible to figure out in detail for each prospective customer just what saving he would make by eliminating coal dust, ash handling, soot, shortage of fuel, tied-up capital, furnace tending, and the many other items which make up the budget of running a coal furnace. But this would not hit at the major motive which has actuated the customer in making his inquiry.

For this reason we should start out by considering other fuels and their prices as directly limiting our market for house heating. Gas as a fuel for heating houses can be well sold on its own distinct merits, without comparison to other fuels. We need not blind ourselves to other fuels, nor attempt to forget that they exist. Even admitting them as competitors, on a price basis, we have so great an advantage in the appeal of cleanliness and convenience that we need not let price competition worry us seriously.

Put Gas in Right Light

If proper means are taken to place the subject of gas as a fuel in its right light, and in the class by itself to which it belongs, this will do more than any one thing to meet and overcome the competition from oil which no doubt is one of the principal sales resistances to a more rapid spread of the gas heating idea. Yet in one most important respect, oil heating is benefiting the gas heating idea because it has done so much to put over "automatic warmth."

The public has grasped the significance and value of automatic heat control, accepts it as one of the principal features of modern heating. Gas with its sensitiveness to regulation and simplicity of control lends itself to promotion on this score more forcibly than oil and thus the gas industry can plant a fertile seed in ground already prepared for it.

The fluctuating prices of other fuels, and the gradual upward trend which has occurred within the past few years (and which we believe will continue on an increasing scale) are bound to affect the scope of our market favorably. When we add to this the lackof control and the uncertainty of supply—which have been so recently demonstrated to consumers in the coal strike—we add one more "outer fringe" to the circle of our prospective market.

But even with our heartiest effort we shall be a long time reaching the outer fringes of our market based on the comfort and convenience appeal—and by that time the prices and supply of other fuels will have reached a point at which new territory is open to us without bidding against them on a strictly economic basis.

Counterbalancing House Heating Load Peaks

G. E. Whitwell

Byllesby Engineering and Management Corp.
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THE writer has just returned from a trip which has extended from the Middle West to the Pacific Coast, and during the course of which he nas taken the opportunity to inquire of many gas company operators and officials the answer to the question "What can be done by gas companies to fill the summer-load valley that has resulted from a considerable house heating load or will result if such business is aggressively sought?"

The answers which were received varied greatly. Some showed that a great deal of thought had been given to the subject; others that little or no consideration had been given to it. With the latter it was generally true that no great amount of attention had been paid to the possibility of obtaining gas house-heating.

Those answering the question were representative of the manufactured gas industry everywhere except along the Atlantic Coast. Perhaps, because of the fact that it was not possible to discuss the matter with gas men in the great Eastern cities, the opinions and thoughts which were obtained are not inclusive of all conditions that have to be met throughout the industry; nevertheless, an attempt was made to determine the situation as it is affected by large cities and small, industrial centers and residential communities, warm climates and cold, widely varying temperatures and more uniform ones, competive wood or oil and the various methods of gas manufacture and distribution that range from oil gas delivered largely under high pressure to coal gas under low pressrue.

For what they are worth, the opinions (and in general, they are little more than opinions, for it was infrequent, indeed, that any real supporting data were found to make it possible to dignify them as statements of fact) are briefly summarized here, and the two outstanding conclusions on which there was general agreement are presented.

Somewhat naturally, perhaps, the subject of refrigeration with gas was usually the first possibility discussed. Almost invariably the following thoughts were brought out:

Gas for Refrigeration As a Load

1. At the present time the gas refrigerator has not yet reached the stage of practical development where any immediate considerable load will result.
2. Such refrigerators will probably be on the market soon.
3. When they are, too much hope of a high concentration of summer gas load is probably not justified, for it is likely that domestic refrigeration will be against house temperatures of approximately 70 degrees F. rather than outside temperatures, and it is, therefore, not at all impossible that the business will have a good annual load factor.
4. If such a condition is only partially true, it will still be difficult to conceive of refrigeration as materially affecting the summer valley for some time to come because of the relative smallness of the individual refrigeration load when considered in connection with the peak day or peak hour load of a total house-heating system.
5. Refrigeration will provide the gas industry with

a most desirable volume of business, and will be a distinctly valuable asset, but it does not now provide a solution to the summer valley created by house-heating.

While it is probably, at least for the present, of limited application, it is not unnatural that, in certain localities, mention was always made, in connection with refrigeration, of the possibility of domestic and industrial air conditioning. It is, indeed, a pleasing and not altogether fanciful thought that the fuel that will maintain the house temperature at 70 degrees F. during the winter will be employed to accomplish the same end during the summer. Such summer air conditioning in homes, however, must be classed with the luxuries, and even then will have application of any moment in but a small area in this country. Industrially, it offers a market for gas in a highly competitive fuel field; it is far from impossible that some business can be obtained, but it is unlikely that enough will be found soon to materially affect the annual load factor.

Water Heating

There is always one summer gas use which comes immediately to mind; namely, water heating. Statistics abound to show that the percentage of saturation of this business in any community always falls short of 100, and in some localities is very low indeed. This is a real off-setting load to house-heating. It can be obtained. But here, again, in cities where a relatively large amount of both water and house-heating has been obtained, it is found that the former, even though used by many, does not total enough business to materially aid in balancing the large house-heating demand of relative few. About the most that can be said is that water-heating helps and is attractive business which should be aggressively sought.

Other distinctly summer loads come to mind as characteristics of individual local conditions. In general, though, the total of the business thus obtained, while desirable, fails, like water-heating, to provide a solution to the summer-valley problem.

Discussion of the problem, therefore, always turned to other means of improving load factor as, for example, (1) increasing the total annual consumption with business equally spread over the year, or (2) decreasing the amount of fuel required to do the same amount of space heating, or (3) utilizing the plant equipment necesarry to meet the peak demand in off-peak production of some material in the manufacture of which gas plays an important part.

All of these considerations are thoughts worthy of consideration, but after such consideration it has been generally thought that, while each one helps, none or the combination of all of them will, in the immediate future, successfully or anywhere nearly completely off-set the house-heating peak.

In the matter of a large increase of business evenly spread over the year, reference is made, of coures, to the so-called industrial load—a very valuable business, but one which serves rather to increase the base load and thus improve the annual load factor than, except in a relatively few cases, fill the summer valley. Its chief asset to the gas industry is that, by providing volume, it tends usually to decrease costs per thousand feet of gas made and distributed.

Better Equipment

Attempts to decrease the amount of gas needed as fuel to heat a given space are taking the form of better equipment, better installations, and better insulation. As such they materially decrease the cost of house heating with gas but, in so doing, only tend to increase the number of customers to whom gas house heating is a possibility. It is not at all impossible that such means in the long run will increase rather than decrease the total maximum demand and the summer valley will only become more pronounced.

The use of idle plant capacity for the manufacture of products other than gas is most intriguing in contemplation. Considering only the possibility of motor fuel, it has been estimated that by processing water gas, the idle water gas capacity in the United States would have supplied the equivalent of thirteen per cent. of the 1924 gasoline consumption. Synthetic motor fuel from water gas brings to the mind an entirely new aspect to the gas house heating business. Such a business, however, still requires a process capable of making a sufficiently cheap competitive fuel. It offers no immediate means for providing summer-plant use and no means at all for equalizing distribution load.

Conclusions

So the question asked of gas men throughout the middle and far West remains unanswered. Not so, however, the desirability of seeking gas house heating business, for most of these men have come to the following present conclusions:

1. Let the gas industry know its costs for serving various classes of customers, and
2. Sell gas for house heating, as for domestic, commercial, and industrial uses, at prices and with simple rates that will, on the average, bring a fair return on whatever production and distribution capacity is needed.

It is rare indeed to find a utility that so keeps its accounts that accurate knowledge of the cost of service, by groups of customers, can be had. Some companies stand out in having made significant progress in ascertaining these costs. Three-part, or, better yet, four-part analyses have been made and the results incorporated in the rate schedule. Generally, however, it is not thought that rates for house heating are what they would be if costs of service were better known.

Where these costs are known and, based on them, a simple, practical, workable rate has been evolved, it is not usually found that the cost of house heating with gas is so great but that many customers can avail themselves of it. They are willing and able to pay for it as a home comfort which they do not care to do without; the gas company need not be concerned more with the summer valley than to do all in its power to partially fill it by whatever means may be locally available. For, if costs are known and proper rates are made, gas house heating is now a profitable venture for both company and customer.

Factors That Govern Sales of House Heating

H. Leigh Whitelaw

American Gas Products Corp., New York, N. Y.

A CLEAR understanding of the public utility's relation to the commercial aspects of heating, where its responsibilities should properly begin and end, the functions it is best suited to perform and the principles upon which its action rests is of paramount importance, indeed the foundation of all successful selling.

More than one house heating sales campaign has come to grief for lack of the proper foundation at the start.

We may fairly begin with the premise that the chief end of house heating is the increased sale of gas at a profit. Wherever gas is sold the gas company must accept a responsibility for service extending not only to the commodity supplied but to the gas using equipment installed. In house heating, therefore, the gas company sells not only more gas but actually a complete heating service by reason of the use of the gas in equipment which is also sold through it.

The means to the end outlined briefly above constitutes the establishment of a commercial policy which will attain that end with a minimum of overhead sales expense and a maximum protection to the customers' best interests and those of the utility. Sales policies may, and frequently do, extend all the way from making house heating in all its phases the exclusive function of the gas company organization, to the complete delegation of the business to agencies without the company including the responsibilities that should of necessity and as already pointed out, go hand in hand with the new service that the company is endeavoring to render.

The writer believes he is familiar with practically every plan of importance that has been tried with reference to marketing gas-fired boilers by gas companies. It is becoming increasingly evident that those who are making the most conspicuous success are operating on a policy that insures complete cooperation with the heating trade. Such a policy in practice has been found to hold the following advantages:

For the Gas Company

1. Complete control of all factors governing the installation of a gas boiler, such as survey of the job before the installation is made to determine if radiation is sufficient, and if the right size boiler is selected.

2. Location of job. Protecting the gas company against an installation being made where their main capacity is insufficient to handle it satisfactorily.

3. Correct estimates of fuel consumption, protecting the gas company against high bill complaints and loss of good-will.

4. Control as outlined above insures the maximum protection to the gas company, heating contractor and owner, and provides the gas company with unusual powers to enforce correct heating standards.

For the Owner

1. The owner is insured of the selection of the right size boiler or furnace to handle the load under the supervision of the gas company which is primarily interested in the successful operation of the plant in every way.

2. The owner will be able to enjoy this wonderful heating service due to the supervision of the gas company which would prevent a heating contractor from putting in insufficient radiation and insufficient boiler capacity.

3. The owner or architect is assured of receiving a standard of heating service which up to the present time is practically unknown in the heating industry.

For the Heating Contractor

1. The heating contractor is protected against unfair competition.

2. His profit on the boiler or furnace is assured.

3. He is relieved of service and call-backs that he has with all other types of heating equipment, and for which he can make no charge which simply emphasizes the necessity for his co-operation with the gas company in order to enjoy the protection provided by this co-operation.

An interesting example of the above policy is the experience of the Stamford Gas and Electric Company whose plan is outlined in the facsimile of a public announcement made recently to its customers and reproduced herewith. The text of this announcement which was in the form of a full-page newspaper advertisement follows:

To those who believe it difficult to secure the cooperation of the heating trade, it will be of interest to know that the eighteen leading contractors of Stamford who are now assisting the gas company, paid, collectively, $260 in cash towards defraying the cost of the campaign in question.

Summing up it may be said that any practical plan based upon local conditions, which will lead to mutual co-operation between the gas company and the heating trade, along the general lines outlined, is the foundation upon which the successful sale of house heating very largely rests. Departure from such a policy, however remarkable and successful in the writer's opinion, are exceptions that prove the rule.

Factors Governing House Heating Market

What income groups are the best prospects

Thomson King

Peerless Heater Company, Pittsburgh, Pa.

IN considering the question of income range within which we will find our prospects for gas fired boilers, it is evident that this range will vary very widely with local conditions and with the personal condition of the prospect. By local conditions we mean the climate in which the prospect lives and the price he must pay for his gas. By personal conditions we mean such questions as whether he has to be away from home a large part of his time, whether there is any other man available in the family to look after the furnace or boiler, whether he is naturally a good or poor fireman, the size of house he lives in and many other items.

In order to make a beginning in the consideration of these factors we plotted the following chart. In this chart we used annual income in thousands of dollars for abscissae and for our ordinates we took the amount of radiation in the residence expressed in equivalent sq. ft. of steam radiation. We can also make these ordinates represent B.t.u.'s required in the gas per season. This obviously will differ with climate, but we used as an average the following assumptions:

The consumption of 1,000 cu.ft. or 550 B.t.u. gas per sq.ft. of equivalent steam radiation per heating season. This enables us to translate sq.ft. of radiation into gas consumption for the season and also total B.t.u. in the gas.

Income Spent on Heating

The next assumption it is necessary to make, and possibly the most important of all in the present discussion, is what proportion of his income can we expect our prospect to devote toward the purchase of gas for heating his residence? After giving this matter careful consideration we came to the conclusion that we might set this figure at 6 per cent, it being understood that this 6 per cent was the allowance in the family budget which might be made to cover all operating expenses chargeable against the heating of the house. In the case of coal, this would include not only the bare cost of the fuel itself but the cost of tending the furnace, removing the ashes, cleaning the house, etc. In the case of a gas boiler the whole 6 per cent might be devoted toward the purchase of gas as this would be practically the only operating expense. We believe that this figure of 6 per cent will probably be severely criticised. We also believe that any other figure we might have selected would suffer the same criticism, as it is an item about which many people will not agree. We can only hope that our critics will be divided fairly equally as to their belief that it is too large or too small; at best it cannot be anything but an average figure and individual cases will vary very widely. The man who is away from home a great deal and has no one to look after the furnace can afford to pay more than the man who is always available, and especially if the latter has a taste for the office of fireman and the former has a plentiful lack of relish for the same job.

Geographical Location and Climate

The consideration of this question has two phases. One relates to the effect on the company supplying the gas, the other relates to the effect on the user of the gas.

It is evident the better the load factor in gas heating the lower the price, other things being equal, the company can make on the gas it sells for heating. The load factor depends very largely upon climate. In general, the further north we go the better load factor we obtain. A study of monthly consumption curves for various parts of the country shows for instance that the load factor is much better in Winnipeg than in Galveston, but the statement that the load factor of a northern community is always better than that for one further south cannot be made because we find that San Francisco has a better load factor than Winnipeg. This is due to peculiar conditions affecting that part of the Pacific Coast; therefore, we make the first statement as a general one except where it is made inoperative by some peculiar local climate conditions. I think we can briefly summarize the effect of geographical location as far as the gas company is concerned by stating that we must translate our geographical location into load factor, which is easily done, and that the higher the load factor, the lower the rate the gas company can make, other things being equal, and consequently the wider the market for the sale of gas heating appliances.

The effect on the user is somewhat more complex as we seem to be confronted with several very human but very illogical conditions. One of these is that the American seems to be willing to spend about a certain percentage of his income on heating and this does not vary greatly with the latitude in which he lives; in other words, a man living in Minnesota lives in a smaller house, uses insulation in his walls, double windows, storm doors, and all the other de-

vices that restrain his fuel bill. The man living in Atlanta, Ga., builds his house loosely, never thinks of using insulation, double windows, or weather stripping and consequently spends almost as much for heating his house as the man in Minnesota. In fact

I haven't the slightest doubt if a study were made we could find a greater percentage of income applied to fuel in many installations when compared to the same incomes in a latitude 500 miles further north.

Conclusions

The above argument tends to favor the widening of gas prospect lists in the north, because, if the gas rate can be made lower and if the man is willing to apply about the same amount of his income to heating irrespective to where he lives, the gas company would be much more able to encourage heating in the north than in the south.

On the other hand, in northern climates when the heating season begins it is usually pretty steady and the coal boiler or furnace may be started and kept running steadily, for heating will be needed for seven months at least, whereas for the south during a great part of the winter there are many days and parts of days when little or no heat is needed. This gives gas added advantage over coal on account of its ease of control and flexibility. I think that this is the greatest climatic effect that we have to reckon with in the individual.

We may therefore sum up by saying that so far as the gas company is concerned the field for heating is widened most by a climate which insures a good load factor in the gas sent out for heating, whereas as far as the individual is concerned the climate having fairly wide variations of temperature and a number of days or parts of days when heating is not needed will have the greatest effect. These are somewhat contrary effects and to some extent tend to neutralize each other.

Gas Company Audits and Auditing*

1926 committee makes a detailed report

A. S. Corson

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IN preparing the report, your Committee has endeavored to outline a system of auditing which will permit checking and verification of a gas company's financial transactions and operations, but which will not be so detailed as to involve much labor and expense.

The Audit System as outlined in the report is designed to be of particular benefit to the smaller companies, which in many cases have neglected regular and systematic audits due to the expense entailed, as well as failure to realize the numerous benefits to be derived therefrom.

The work of the audit is outlined in such a manner as to permit of its application by someone selected by the company management within the company organization or from a central office; and may be made complete in all details covering all departments, or may cover one or more particular branches of the business selected, which may need special examination.

It will be noted that the work of the audit goes far beyond the usual Balance Sheet audit, as it provides for a thorough verification and checking of the innermost workings of a company's operations.

Purposes and Advantages of an Audit

The purposes and advantages of an audit are many, chief among which are:

1. The detection and prevention of fraud and errors, particularly in reference to errors of principle.
2. The ascertainment of the actual financial condition and earnings of a company.
3. Analysis of those operations of a company which are within the scope and field of an audit, with such constructive suggestions as may be helpful and productive of more efficient results.

* Presented at the Wednesday meeting of the Accounting Section, A. G. A. Convention, Oct. 13, 1926.

While the above are cited as being the principle purposes of an audit, particularly a detailed and complete audit, there should not be overlooked the moral effect of a regular audit upon the person whose work is being audited, in that it tends to keep the work up to date and in proper order.

Audits of a special nature, of course, carry with them the special purpose for which they are made.

Qualification of an Auditor

An auditor should have both analytical and constructive ability, in addition to a knowledge of scientific accounting.

To be of particular benefit to the company being audited, the auditor should be thoroughly familiar with the operations and details of the particular industry represented; and in the case of a gas company, the best results are obtained when the auditor is familiar with the innermost workings of the gas business.

In this way the benefits of specialization, particularly of a constructive nature, are accomplished.

(Editor's Note: Due to lack of space, it has been impossible to publish this excellent and much detailed report in full. It can be obtained from the A. G. A. Some of the subjects discussed are cash balance, bank balance, delinquent notes, cash shortages, journal, investments, notes, capital stock, minute books, collections, customers' accounts, customers' deposits, uncollectible bills, meter records, inventories, pay roll, insurance, paying-off, taxes, etc., etc.)

Storeroom Accounting and Inventory Taking*

Committee reports on methods, records and physical layouts

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Introduction

THE proper care of, and accounting for materials and supplies is essential in all prudently managed organizations. The values involved have as direct an effect on the Income Account and Balance Sheet as the more carefully guarded cash transactions. This fact is not always fully appreciated by the personnel of the organization and in consequence examples are frequently seen of injudicious buying, inadequate methods of storing, supervision and accounting which entail loss through waste and even theft of this asset.

In this report we have endeavored to describe and discuss suitable procedures covering all phases of this subject under the following titles:

Physical Layout of Storeroom.
Stores Records and Accounting Methods.
Inventory Taking.

Each of the above sub-committee reports presumably fully considers the subject matter of its title, but it is deemed advisable to refer to and possibly emphasize some of the differences in practice which have developed.

Physical Layout of Storeroom

Whether a company should adopt the practice of centralizing all its stores at one location or decentralize in more than one storehouse is a question depending on the size of the company concerned and the character of the territory served. It seems obvious that in a small compact territory the centralized storeroom is more suitable. Its advantages consist of economies in carrying a minimum stock, saving in storerom management and operation and if centrally located affords quick access to all points. But in companies serving a territory of greater magnitude the use of decentralized storerooms becomes necessary to avoid the loss of man and truck hours entailed in traveling long distances to a central storeroom.

Sometimes a combination of both practices may be adopted within a company by placing the bulk of the stores in one location with small storerooms in isolated sections. Your committee concludes that this is a matter for managerial discretion according to the local conditions involved.

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*To be delivered before the Thursday meeting of the Accounting Section, A. G. A. Convention, Atlantic City, October 14, 1926.

Stores Records and Accounting Methods

The operations in this phase of the subject are fairly well standardized. It is true that some may prefer loose-leaf records, others cards or bound records, but that is immaterial. The standard procedure requires a requisition on the purchasing agent to purchase, the preparation, when the material has been received, of a material receipt form to be attached to the vendor's invoice, entry in the stores ledger and then passing the invoice through for payment. Material requisitions are received by the storekeeper and forwarded when filled to the Stores Record Department and after entry in the stores ledgers are forwarded to the Auditing or Accounting Department for entry in the general records. Each company will have its routine to accomplish these results, but the practices are fairly uniform.

Inventory Taking

There are two methods of taking stock. In order to distribute the load uniformly over the year some companies have adopted the practice of checking a number of bins each day, by employees in the Inventory Department and comparing these results with the balances in the stores ledgers. Other companies rely on the yearly or semi-annual inventory taking, while others practice both methods. Certainly as accounts we can make no valid objection to frequent inventory taking. The essential point is to make the stores ledgers reflect the facts and investigate thoroughly large discrepancies between phyical and book records.

In General

The matter of organization is of paramount importance from the standpoints of control and responsibility.

In the large companies there is usually a general storekeeper, responsible to the management, in charge of all physical stores. The storeroom accounting and inventory taking is under the jurisdiction of the Comptroller or Auditor. Under this plan there is a continuous internal check of purchases and stores which is very desirable.

While recognizing that there are many variations of this plan your committee favors such a form of organization as a means of affording proper control and fixing responsibility.

Physical Layout of Storerooms

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ACCOUNTING, as it is applied to storeroom records, achieves its aim when complete control of storeroom material by means of correct records is attained. This means that efficiency must exist in the handling of physical material with a view to economy of operation, both in the movement of the stock as well as in the number of records maintained in order to check it. To that end, and in order to visualize the physical layout of a storeroom, the Committe has treated the subject under the following heads:

1. Site.
2. Facilities—external.
3. Facilities—internal.
4. General plan.

Site

In selecting a site for a storeroom, a location with a railroad siding and perhaps waterfront facilities should be given first consideration. A site of this character, so located with relation to the points of distribution, will eliminate considerable hauling to the storeroom, and at the same time be a large factor in reducing the cost of all material received by freight. If it be impossible to select such a site, then the location necessitating the shortest haul should be given second consideration.

Facilities—external

(a) Receiving and Dispatching Facilities. For practical reasons, the storeroom building should be equipped with a covered platform, or extension, of sufficient dimensions to permit of its use for the receiving and dispatching of material. This platform arrangement may also serve as a temporary storage place for material which cannot be placed in the storeroom at the time it is received, due to emergencies which may arise. It is suggested that the platform be, at a minimum, 60′ x 20′. If extended to a greater length it would, in proportion, increase the facilities.

It is also important that the yard, or driveway space, be of sufficient size to allow trucks approaching and leaving the platform without interfering with each other. A platform scale of sufficient capacity, to permit of the weighing of truck loads of material, should be provided as part of the external facilities. In paving yard, experience has proven that granite block, set in concrete, is the most durable and serviceable for all-season use.

(b) Yard Storage Facilities. External facilities should include the storing in buildings of slow burning construction articles of a highly combustible character, such as, gasoline, oil, paint, etc. A tank and pump system is recommended in connection with the storing of gasoline and oil.

Racks (constructed of pipe) properly roofed and sided, and of sufficient size to receive at least one carload of the various standard sizes of steel and wrought iron pipe, should be erected in a convenient place in the yard adjacent to the storeroom building platform. This arrangement will facilitate the storing, as well as the dispatching of pipe. Cast iron pipe, particularly the larger sizes, may be stored at convenient spots in the yard without the use of racks.

Facilities—Internal

The most important factor entering into storeroom layout is that of accessibility of all materials; especially those for which there is a constant demand.

The ground floor in a storeroom might properly be used for storing distribution material, such as fittings, tools and emergency apparatus; also maintenance material for all lighting appliances.

Suitable measuring and weighing devices should also be provided as part of the storeroom facilities.

(a) Bins. Fittings should be stored in bins (which may be of steel or wood) of various sizes, and in tiers of 4 or 5 high, eight feet over all. The use of steel in the construction of bins is recommended as it lends itself to greater flexibility, due to the fact that the shelving is adjustable.

In laying out the sections, large bins should be placed along the bottom. These bins may be approximately 2½′ square and can be used for quantity storage of fittings having the greatest demand of those stored immediately above in the small bins. Cards or bin tags should be placed on each bin showing the quantity on hand at inventory, subsequent receipts and issues, and balance on hand. Issues of large quantities may be taken directly from these lower bins, also, replacements for the small bins above, which contain the same size fittings. Withdrawals from the upper bins occur when a small number is issued.

Smaller Bins

The fittings and other materials in the smaller bins should be systematically stored and counted when first placed, and the maximum quantity in a layer ascertained and entered on a cardboard indicator which is placed on the front of the bin. For example: a bin 19½″ x 14½″ x 19½″ high accommodates eight layers of ¾″ ells, 90 to the layer, or a total of 720, with sufficient space remaining at the top to enable one to reach the rear of the bin. The purpose of the indicator is to eliminate the removing and counting of the contents of each bin at inventory time, it being only necessary to count the top layer and added to it the amount opposite the next full layer, which is a total up to and including that layer. Ordinary XXX sheet tin may be used to separate the layers, the outer edge of which should be folded and turned over approximately ½″ to prevent possible injury to employees when placing or removing material. The turned down edge also tends to keep the fittings on the lower layers from becoming dislodged. A card bearing the bin number and a description of the particular material should be attached to each bin. The bin number may be used as the stores ledger folio number.

The large bins previously mentioned, being of greater depth than the smaller bins, because of their projecting beyond the front line of the smaller bins, provide a small counter or step on which employees may stand to reach the upper tiers, thus eliminating the need of a ladder. In case of greater heights, a ladder is more desirable.

Elevators

(b) Elevators. Where material is stored above the ground floor, an elevator of sufficient size to accommodate a loaded automobile truck should be made, if possible, a part of the building equipment. One storeroom visited by the Committee was very fortunate in this respect, being so equipped.

Where conditions do not permit of an installation of this character, an elevator of sufficient capacity to accommodate at least four ranges should be installed, which will facilitate and accelerate the storing and dispatching of material. The storeroom visited is equipped with a 6′ x 6′ x 6′ elevator which can safely carry two ordinary size cabinet ranges. An elevator of this size, however, is less efficient than one having twice its capacity.

Storing of Appliances

(c) Storing of Appliances. It is needless to say that great care must be exercised in the storing of appliances, and any facility that can be adopted to promote efficient and rapid handling should be incorporated in the equipment of a storeroom. The fragile construction of crates, and the possible chipping of enamel has made it a real economy to employ modern methods of handling. The "revolvator," which is used in one of the storerooms visited, accomplishes just this purpose, with no loss or damage. This machine, being portable, further facilitates the stacking of appliances as its platform can be elevated to a height of nine feet. The "transveyor or jack lift" will also be found advantageous for moving materials from place to place in the storeroom and in transferring material from one floor to another. The use of this device further facilitates the storage of materials, and obviates rehandling, in that many articles can

be stored and moved on one platform instead of handling the pieces individually.

(d) Repair Parts. The repair parts, you will note from the view, are also systematically stored, each bin being labeled with a card bearing the various types of appliances on which the parts contained therein can be used.

General Plans

(a) Office. In a storeroom where the accounting is done, sufficient space must be allotted for that purpose.

In this connection, it may be well to realize that the physical stock should be so stored that it can only be reached by persons properly authorized to collect and supply the employees with material specified on their orders. This material should be dispersed by the receiving and shipping clerk, passing under his direct view through openings provided in a wire partition which separates the stockroom from that part of the storeroom where the employees apply for their supplies. This space is taken out of the space used for storage and is not a part of the space allowed for the office.

A counter of sufficient size should be provided in this space for employees to check up their orders with the material which has been issued to them, and also to check back on the orders, when complete, any returned material. Behind the wire partition and in the receiving and shipping clerk's space, counters should be also provided of sufficient size to permit of the assembly of material on which storeroom orders have been presented. These counters may be constructed of wood and provided with a metal top covering for protection.

Office Space

It is recommended that the office space be on one side of the passageway, and the receiving and shipping clerk's space be on the opposite side of the passageway behind this partition.

Sufficient space should be provided in the office to permit of the proper filing of daily records and underlying data.

(b) Lighting and Ventilation. Careful consideration should be given these two important factors in efficient storeroom operation. When artificial lighting must be resorted to, the best means available should be considered. Inasmuch as many of the storerooms in the industry are not wired for electric current, we have observed a number of installations where four-burner arc lamps are installed in such a manner as to give a fairly even distribution of light.

In a one-story building, ventilation as well as light can be secured through skylights. In buildings where more than one floor is occupied as a storeroom, ventilation should be secured through hinged sectional window sashes, the upper section being arranged so that it can be opened when necessary.

Conclusion

As strongly stressed in the introduction of this Committee's report, the prime fact to be borne in mind in the physical layout of the storeroom is that of economical operation in the handling of the various kinds of material which are received for early distribution. Every effort should be made for ease in handling and speed in execution of orders and the movement of stores material. So far as possible nooks and corners should be eliminated, as they provide hiding places for inconceivably rapid accumulation of material, which may deteriorate, or become obsolete, very much to our discomfort and embarrassment and the company's financial loss. Material should be stored, where possible, in bins or racks, or if of a bulky character, in tiers which will permit of expeditious stock taking and ready checking for the frequent periodic inventories, which characterize good storeroom accounting.

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